

Dr. Keven Yost
FINC 3610
Principles of Business Finance
Course Packet

Summer 2019
Fall 2019
Spring 2020

Introduction to Corporate Finance

Basic Areas of Finance

- Corporate Finance
- Investments
- Financial Institutions
- International Finance

What is Corporate Finance?

Corporate finance focuses on 3 questions:

1. What should we invest in?
2. How do we finance those investments?
3. How do we manage the day-to-day operations of the firm?

The Balance Sheet Model of the Firm

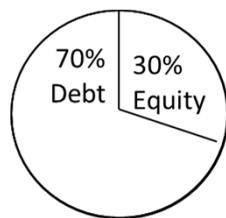
- Balance Sheet Identity:

Capital Budgeting

- What is capital budgeting?
 - The process of _____ the firm's _____.
- How do we do it?
 1. Estimate cash flows.
 2. Estimate the cost of those cash flows.
 3. Discount the cash flows.

Capital Structure

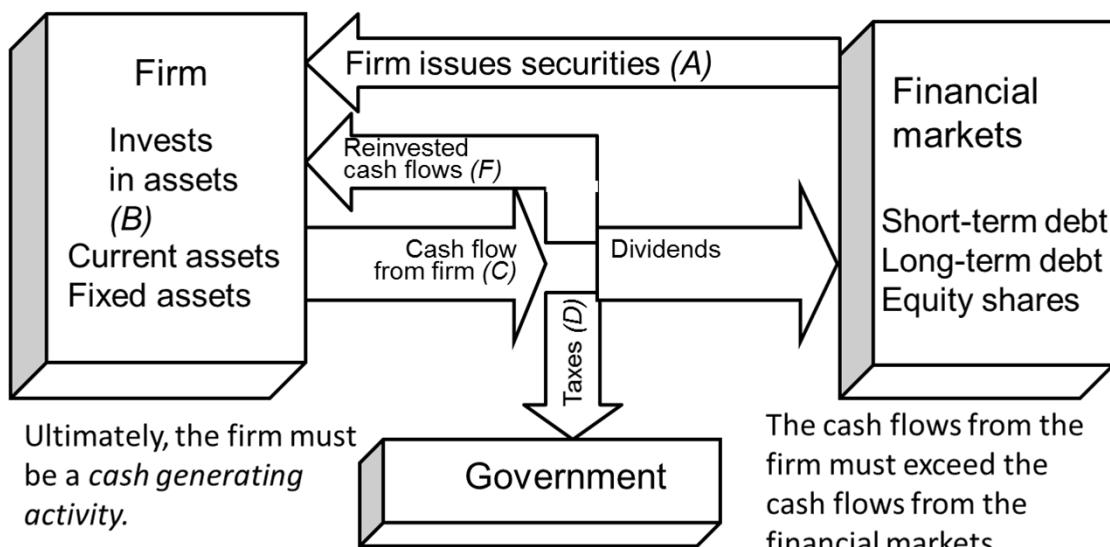
- What is capital structure?
 - The _____ describing how the firm is financed.
- Does capital structure matter?
- How do taxes affect this decision?
- How does this relate to the goal of the financial manager?



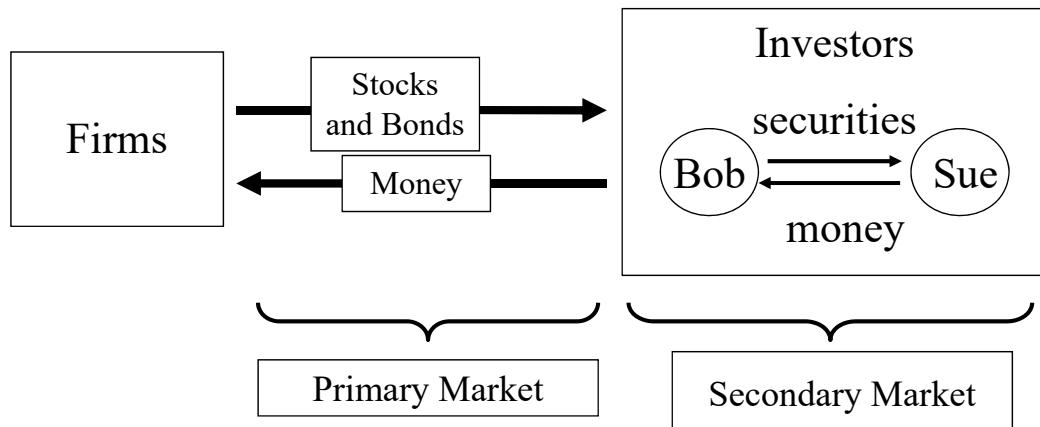
Short-Term Cash Flow Management

- What does short-term cash flow management entail?
 - Net Working Capital =
 - Cash Management
 - Credit Management

The Firm and the Financial Markets



Financial Markets



Debt and Equity as Contingent Claims

- Debt is _____.
- Equity gets _____.

A corporation has \$100 in debt.

If the value of the firm's assets is...

- \$75, debtholders get _____ and stockholders get _____.
- \$100, debtholders get _____ and stockholders get _____.
- \$200, debtholders get _____ and stockholders get _____.
- \$1,000,000, debtholders get _____ and stockholders get _____.

Sole Proprietorship

- Pros
 - Easy startup.
 - Taxed as personal income.
- Cons
 - _____.
 - Life limited to that of owner.
 - Equity limited to owner's wealth.
 - Difficulty in transferring ownership.

Partnership

- General vs. Limited Partners
- Pros
 - Easy startup.
 - Taxed as personal income.
- Cons
 - _____.
 - Life limited to that of the owners.
 - Equity limited to owners' combined wealth.
 - Difficulty in transferring ownership.

Corporation

- Corporation: *A business created as a distinct legal entity composed of one or more individuals or entities.*
- Separation of Ownership and Control
 - Shareholders
 - Directors
 - Managers

Corporation

- Pros
 - _____.
 - Easy transfer of ownership.
 - Unlimited life.
 - Equity is not limited.
- Cons
 - Difficult to startup.
 - _____.

The Goal of the Firm

What does that mean?

Agency Conflicts

- What is a principal-agent relationship?
- Agency Problem/Conflict: The possibility of conflict of interest between the stockholders (the principal) and management (the agent) of a firm.

Agency Conflicts

- *Agency Costs*: The costs of the conflict of interest between stockholders and management.
 - Direct agency costs:
 -
 -
 - Indirect agency costs
 -

How do we control agency conflicts?

- Managerial Compensation
- Control of the Firm
 -
 -

Chapter 1 Suggested Problems

- Concepts Review and Critical Thinking Questions:
 - 3, 6, 7, and 8

Financial Statements and Cash Flow

Financial Statements

The Annual Report and Form 10-K

- Balance Sheet
- Income Statement
- Statement of Cash Flows
- Statement of Stockholders' Equity

EDGAR

- www.sec.gov

The Balance Sheet

The Balance Sheet Identity:

Liquidity

- In the Balance Sheet
- Pros and Cons of Liquid Assets

Yost Rocks, Inc. Balance Sheet December 31, 2018 and 2017 (In \$millions)					
Assets	2018	2017	Liabilities (Debt) and Stockholder's Equity	2018	2017
Current Assets:			Current Liabilities:		
Cash and Equivalents	\$140	\$107	Accounts Payable	\$213	\$197
Accounts Receivable	294	270	Notes Payable	50	53
Inventories	269	280	Accrued Expenses	223	205
Other	58	50	Total Current Liabilities	\$486	\$455
Total Current Assets	<u>\$761</u>	<u>\$707</u>			
Fixed assets:			Long-Term Liabilities:		
Property, Plant, Equipment	\$1,423	\$1,274	Deferred Taxes	\$117	\$104
Less Accumulated Depreciation	(550)	(460)	Long-Term Debt	471	458
Net Property, Plant, Equipment	873	814	Long-Term Liabilities	\$588	\$562
Intangible assets and other	245	221			
Total Fixed Assets	<u>\$1,118</u>	<u>\$1,035</u>	Stockholder's Equity:		
Total Assets	<u><u>\$1,879</u></u>	<u><u>\$1,742</u></u>	Preferred Stock	\$39	\$39
			Common stock (\$1 per value)	55	32
			Capital surplus	347	327
			Accumulated Retained Earnings	390	347
			Less Treasury Stock	(26)	(20)
			Total Equity	<u>\$805</u>	<u>\$725</u>
			Total Liabilities and Stockholder's Equity	<u><u>\$1,879</u></u>	<u><u>\$1,742</u></u>

The Balance Sheet

Market Value vs. Book Value

- What are market value and book value?
- Where on the balance sheet can we find the true (market) value of the firm?
- How do we find the true (market) value of total stockholders' equity?
- What is the goal of the firm?

The Income Statement

The Bottom Line:

GAAP

- The Timing of Cash Flows
- The Matching Principle
- Non-Cash Items (e.g., depreciation)

Yost Rocks, Inc.
Income Statement
For Year Ended December 31, 2018
(In \$ millions)

Total Operating Revenues	\$2,262
Cost of Goods Sold	(1,655)
Selling, General, and Administrative Expenses	(327)
Depreciation	(90)
Operating Income	\$190
Other Income	29
Earnings Before Interest and Taxes	\$219
Interest Expense	(49)
Pretax Income	\$170
Taxes	(84)
Current: \$71	
Deferred: 13	
Net Income	<u>\$86</u>
Retained Earnings:	\$43
Dividends:	\$43

The Statement of Cash Flows

Cash Flow From _____ Activities

Cash Flow From _____ Activities

Cash Flow From _____ Activities

The Statement of Cash Flows

Sources and Uses of Funds

- Changes in Current Assets
- Changes in Current Liabilities

Examples:

- ↑ Accounts Payable
- ↓ Inventory
- ↑ Accounts Receivable
- ↑ Accrued Expenses

Yost Rocks, Inc.
Statement of Cash Flows
For Year Ended December 31, 2018
(In \$ Millions)

Cash Flow from Operating Activities	
Net Income	\$86
Depreciation	90
Deferred Taxes	13
Change in Assets and Liabilities	
Accounts Receivable	(24)
Inventories	11
Accounts Payable	16
Accrued Expense	18
Other	(8)
Cash Flow from Operating Activities	\$202
Cash Flow from Investing Activities	
Acquisition of Fixed Assets	(\$198)
Sale of Fixed Assets	25
Cash Flow from Investing Activities	(\$173)
Cash Flow from Financing Activities	
Change in Notes Payable	(\$3)
Net Change in Long-Term Debt	13
Dividends	(43)
Repurchase of Stock	(6)
Proceeds from New Stock Issues	43
Cash Flow from Financing Activities	\$4
Total Change in Cash	\$33

Some things to remember...

_____ is not a cash flow.

_____ is not a cash flow.

Financial statements are _____ looking, not forward looking.

The balance sheet shows _____ values, not
_____ values.

2017 Corporate Tax Rates (Table 2.3)

<u>Taxable Income</u>	<u>Tax Rate</u>
\$0 - \$50,000	15%
\$50,001 - \$75,000	25%
\$75,001 - \$100,000	34%
\$100,001 – \$335,000	39%
\$335,001 - \$10,000,000	34%
\$10,000,001 - \$15,000,000	35%
\$15,000,001 - \$18,333,333	38%
\$18,333,334 +	35%

Taxes

Average Tax Rate

Marginal Tax Rate

If a corporation has \$90,000 in taxable income,
how much does it owe in taxes?

If a corporation has \$90,000 in taxable
income, how much does it owe in taxes?

Corporate Taxes: 2018 and Beyond Tax Cuts and Jobs Act of 2017

Flat corporate tax rate = _____

Marginal Tax Rate = _____

Average Tax Rate = _____

Suggested Problems

Concepts Review and Critical Thinking Questions:

- Chapter 2: 1 and 2

Questions and Problems:

- Chapter 2: 5, 6, 9, 13, 17, and 18
- Chapter 3: 9 and 16

Hi, I'm
ROSA



We Are **The Home Depot**



More saving. More doing.

ANNUAL REPORT 2018

LETTER TO SHAREHOLDERS



Dear Shareholders:

Fiscal 2018 was an exciting year for our company as we began our accelerated investment program to position the business for long-term success. At our Investor & Analyst Conference in December of 2017, we outlined our strategic vision to create the “One Home Depot” experience. We believe our One Home Depot strategy will further unlock the frictionless shopping experience that we envisioned for our customers when we started talking about interconnected retail nearly ten years ago. Back then, we were deliberate in our choice of the word interconnected because we believed that for our customers, a great shopping experience is one that allows them to blend seamlessly the digital and physical worlds.

Our strategic efforts are yielding solid returns. Now more than ever, customers view us as One Home Depot rather than a brick & mortar retailer with a website. While our stores remain the hub of our business, our data tells us that many of our in-store sales are influenced by an online visit and nearly 50 percent of all online U.S. orders are picked up inside our stores. As our customers continue to blend the channels of engagement with The Home Depot, we are investing to drive the One Home Depot experience. Last year we began a multi-year, approximately \$11 billion investment program in our stores, our associates, our digital experience, and our supply chain.

As I reflect on the first year of our investment journey, I am happy to report that we are on track with respect to our strategic priorities. Although it is early days with a lot of work ahead, I would like to take this opportunity to share some 2018 investment highlights.

INVESTMENT HIGHLIGHTS

We believe that when a customer comes to one of our physical stores, it needs to be a great experience. Our customers asked us to reduce several pain points around store navigation and checkout and we made great strides in 2018. We implemented our enhanced wayfinding sign and store refresh package in nearly 1,300 stores, ahead of our initial plan. We also made solid progress on the rollout of our re-designed front-end areas to facilitate faster checkout and are adding automated lockers that make picking up an online order easier and more convenient. These in-store changes are resonating, as customer service scores for checkout time satisfaction and ease of online order pickup have increased.

Our best-in-class customer experience is delivered by our orange-aproned associates who serve our customers every day. The Company's culture, opportunities for career growth, competitive wages and benefits are all part of attracting and retaining talent. Additionally, we are implementing tools that generally make working at The Home Depot a better experience. The enhancement of our in-store order management system, Order Up, and the rollout of our new Overhead Management application on associate FIRST phones, have simplified operations and increased associate productivity. These applications result in less time spent learning and navigating our systems, which means more time in the aisles engaging our customers.

Our enhanced store and associate experience is complemented by investments we are making in an interconnected, digital customer experience. In 2018 we continued to invest in our website and mobile applications, improving search capabilities, site functionality, and product content. This ongoing focus on our digital properties, which fuels the interconnected experience, continues to yield improved customer satisfaction scores, better conversion and increased sales.

Delivering a best-in-class interconnected shopping experience encompasses more than our digital properties and physical store assets. As part of our investment program, we committed to a five year, \$1.2 billion investment in our supply chain to create the fastest, most efficient delivery network for home improvement goods. When finished, our expanded network will enable same-day and next-day delivery capabilities for 90 percent of the U.S. population for both parcel and big and bulky products. We told you that 2018 would be the year of the pilot as we test and learn with new fulfillment centers, and we are now live with a number of these pilot facilities.

As we work on our longer-term supply chain build out, we remain focused on meeting our customer's immediate delivery needs. We made great progress with our store delivery enhancements in 2018, rolling out car and van Express Delivery offerings that enable same-day and next-day delivery of store goods to over 40 percent of the U.S. population for car delivery and over 70 percent coverage for van.

I am encouraged by the progress we have made over the past twelve months, and I am excited about the work and opportunities ahead as we remain focused on enhancing the customer experience by investing in our business.

PRODUCT AUTHORITY

While our journey towards the One Home Depot vision does involve a great deal of change, our passion to maintain our position as the number one retailer in product authority for home improvement never will. We know that we must keep pace with changing customer expectations. Innovation, localization and speed to market are critical, and we are investing to achieve a first to market approach by arming our merchants with better tools, leveraging data to offer greater personalization, and driving a deeper level of collaboration with our supplier partners.

Our professional and do-it-yourself customers shop at The Home Depot because we offer products and services at great values. Our supplier partners work with us to bring new product innovation that saves our customers time and money. We will continue to be the customer's advocate for value, delivering the best products and services at the best value, every single day.

VALUE FOR ALL STAKEHOLDERS

Underpinning our strategy to create the One Home Depot experience is our desire to create value for all stakeholders. This includes our shareholders, our associates, our supplier partners and the communities that we serve. As we invest to unlock the power of a truly interconnected, One Home Depot, we are enhancing our already strong foundation in order to continue to deliver value for years to come.

While implementing year one of our investment program, our team delivered another year of record results. During fiscal 2018, sales grew 7.2 percent to \$108.2 billion, with comparable sales growth of 5.2 percent for the total company and 5.4 percent in the U.S. We saw sales growth in all of our U.S. regions, Canada and Mexico. Our fiscal 2018 net earnings were \$11.1 billion, or \$9.73 per share, a 33.5 percent increase in earnings per share from the prior year.

Our capital allocation philosophy is straightforward. We will continue to invest in the business to drive growth as well as productivity and efficiency. We look to return a meaningful percentage of earnings to our shareholders through dividends and share repurchases. In fact, during fiscal 2018, after investing in the business, we returned \$14.7 billion to our shareholders in the form of dividends and share repurchases.

As we look ahead, we expect our investments will result in continued growth and profitability. Our strong performance in fiscal 2018 positions us well with respect to our 2020 financial targets. By fiscal 2020 we are aiming to grow our sales to a range of \$115 billion to \$120 billion, with an operating margin range of 14.4 percent to 15.0 percent, and a return on invested capital¹ of more than 40 percent.

¹Return on invested capital, or ROIC, is defined as net operating profit after tax, a non-GAAP financial measure, for the most recent twelve-month period, divided by the average of beginning and ending long-term debt (including current installments) and equity for the most recent twelve-month period. For a reconciliation of net operating profit after tax to net earnings, the most comparable GAAP financial measure, and our calculation of ROIC, see "Non-GAAP Financial Measures" on page 24 of the Annual Report on Form 10-K for the fiscal year ended February 3, 2019.

LIVING OUR VALUES

Increased our commitment to
\$500M
 for veteran causes by 2025

35,000
 associates are U.S. military
 veterans or reservists

Committed to training
20,000
 skilled tradespeople over the
 next 10 years

\$13M
 donated to associates in need
 through The Homer Fund in 2018

95%
 of associates donated to
 The Homer Fund

OUR CULTURE

In 2019 we will celebrate our 40th anniversary. In 1979 our founders established the culture of The Home Depot, and it remains our foundation. The culture centers around our values and a leadership construct. It is the lens through which we evaluate and manage important environmental, social and governance (“ESG”) issues that impact our business. We organize our approach to ESG around three key pillars: Focus on People, Strengthen Communities and Operate Sustainably.

We focus on people by making The Home Depot a great place to work. For us that means fostering an environment centered on our core value of respect for all people, where diversity and inclusion are celebrated, and people have the opportunity to develop and advance their careers. Our more than 400,000 orange-blooded associates live our culture every day. They are our single-greatest asset, and they differentiate us in the marketplace.

Our commitment to strengthen the communities in which we operate is also rooted in one of our eight core values – doing the right thing. When natural disasters strike, as they did once again in 2018, we work tirelessly to deliver aid to those impacted. Beyond disaster relief, we continued to positively impact the lives of military veterans and their families, and in 2018 we increased our commitment to \$500 million dollars for veteran causes by 2025.

In 2018 The Home Depot Foundation also expanded its mission beyond veteran causes and natural disasters, committing \$50 million to train 20,000 tradespeople over the next 10 years in order to fill the growing skilled labor gap in the U.S.

Our commitment to operate sustainably goes back decades. As the world's largest home improvement retailer, we believe that we are in a unique position to source products and foster ideas that not only help us operate sustainably as a company, but also reduce the environmental impact of our customers. In 2018 we continued our fantastic progress in this area. In recognition of these efforts, CDP, an environmental impact non-profit, named The Home Depot to its Climate Change “A” List for actions to cut carbon emissions and mitigate climate risks.

As we look forward to 2019, I am incredibly excited about what lies ahead for us as a company, but I am also reflective of how far we have come. As we celebrate the 40th anniversary of our first store opening, it is worth noting how the company has evolved and changed throughout the years, while at the same time, staying true to a simple truth inherited from our founders: “If you take care of the associates, they will take care of the customer and everything else will take care of itself.”

Craig Menear
 March 28, 2019

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549
FORM 10-K

(Mark One)

- ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended February 3, 2019
or
 TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from _____ to _____
Commission file number 1-8207



THE HOME DEPOT, INC.

(Exact name of registrant as specified in its charter)

Delaware

State or other jurisdiction of incorporation or organization

95-3261426

(I.R.S. Employer Identification No.)

2455 Paces Ferry Road, Atlanta, Georgia 30339
(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code:
(770) 433-8211

Securities registered pursuant to Section 12(b) of the Act:

Title of each class

Name of each exchange on which registered

Common Stock, \$0.05 Par Value Per Share

New York Stock Exchange

Securities registered pursuant to section 12(g) of the Act: **None**

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§ 229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company

Emerging growth company If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes No

The aggregate market value of voting common stock held by non-affiliates of the registrant on July 29, 2018 was \$225.3 billion.

The number of shares outstanding of the registrant's common stock as of March 8, 2019 was 1,103,903,507 shares.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's proxy statement for the 2019 Annual Meeting of Shareholders are incorporated by reference in Part III of this Form 10-K to the extent described herein.

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COMMONLY USED OR DEFINED TERMS

Term	Definition
ASR	Accelerated share repurchase
ASU	Accounting Standards Update
BODFS	Buy Online, Deliver From Store
BOPIS	Buy Online, Pick-up In Store
BORIS	Buy Online, Return In Store
BOSS	Buy Online, Ship to Store
CDP	The not-for-profit organization formerly known as the Carbon Disclosure Project
CFL	Compact fluorescent light
Comparable sales	As defined in the Results of Operations - Sales section of MD&A
DIFM	Do-It-For-Me
DIY	Do-It-Yourself
EH&S	Environmental, Health, and Safety
EPA	U.S. Environmental Protection Agency
ESPP	Employee Stock Purchase Plan
Exchange Act	Securities Exchange Act of 1934, as amended
FASB	Financial Accounting Standards Board
fiscal 2013	Fiscal year ended February 2, 2014 (includes 52 weeks)
fiscal 2014	Fiscal year ended February 1, 2015 (includes 52 weeks)
fiscal 2015	Fiscal year ended January 31, 2016 (includes 52 weeks)
fiscal 2016	Fiscal year ended January 29, 2017 (includes 52 weeks)
fiscal 2017	Fiscal year ended January 28, 2018 (includes 52 weeks)
fiscal 2018	Fiscal year ended February 3, 2019 (includes 53 weeks)
fiscal 2019	Fiscal year ended February 2, 2020 (includes 52 weeks)
FSC	Forest Stewardship Council
GAAP	U.S. generally accepted accounting principles
GRI	Global Reporting Initiative
Interline	Interline Brands, Inc.
IRS	Internal Revenue Service
LIBOR	London interbank offered rate
MD&A	Management's Discussion and Analysis of Financial Condition and Results of Operations
MRO	Maintenance, repair, and operations
NOPAT	Net operating profit after tax
NYSE	New York Stock Exchange
PLCC	Private label credit card
Pro	Professional customer
Restoration Plan	Home Depot FutureBuilder Restoration Plan
ROIC	Return on invested capital
SEC	Securities and Exchange Commission
Securities Act	Securities Act of 1933, as amended
SG&A	Selling, general, and administrative
Tax Act	Tax Cuts and Jobs Act of 2017

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Report of Independent Registered Public Accounting Firm

The Stockholders and Board of Directors
The Home Depot, Inc.:

Opinion on the Consolidated Financial Statements

We have audited the accompanying Consolidated Balance Sheets of The Home Depot, Inc. and Subsidiaries as of February 3, 2019 and January 28, 2018, and the related Consolidated Statements of Earnings, Comprehensive Income, Stockholders' Equity, and Cash Flows for each of the fiscal years in the three-year period ended February 3, 2019, and the related notes (collectively, the "Consolidated Financial Statements"). In our opinion, the Consolidated Financial Statements present fairly, in all material respects, the financial position of The Home Depot, Inc. and Subsidiaries as of February 3, 2019 and January 28, 2018, and the results of their operations and their cash flows for each of the fiscal years in the three-year period ended February 3, 2019, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), The Home Depot, Inc.'s internal control over financial reporting as of February 3, 2019, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated March 28, 2019 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Basis for Opinion

These Consolidated Financial Statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these Consolidated Financial Statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the Consolidated Financial Statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the Consolidated Financial Statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the Consolidated Financial Statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the Consolidated Financial Statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ KPMG LLP

We have served as the Company's auditor since 1979.

Atlanta, Georgia
March 28, 2019

THE HOME DEPOT, INC.
CONSOLIDATED BALANCE SHEETS

<i>in millions, except per share data</i>	February 3, 2019	January 28, 2018
Assets		
Current assets:		
Cash and cash equivalents	\$ 1,778	\$ 3,595
Receivables, net	1,936	1,952
Merchandise inventories	13,925	12,748
Other current assets	890	638
Total current assets	<u>18,529</u>	<u>18,933</u>
Net property and equipment	22,375	22,075
Goodwill	2,252	2,275
Other assets	847	1,246
Total assets	<u>\$ 44,003</u>	<u>\$ 44,529</u>
Liabilities and Stockholders' Equity		
Current liabilities:		
Short-term debt	\$ 1,339	\$ 1,559
Accounts payable	7,755	7,244
Accrued salaries and related expenses	1,506	1,640
Sales taxes payable	656	520
Deferred revenue	1,782	1,805
Income taxes payable	11	54
Current installments of long-term debt	1,056	1,202
Other accrued expenses	2,611	2,170
Total current liabilities	<u>16,716</u>	<u>16,194</u>
Long-term debt, excluding current installments	26,807	24,267
Deferred income taxes	491	440
Other long-term liabilities	1,867	2,174
Total liabilities	<u>45,881</u>	<u>43,075</u>
Common stock, par value \$0.05; authorized: 10,000 shares; issued: 1,782 at February 3, 2019 and 1,780 shares at January 28, 2018; outstanding: 1,105 shares at February 3, 2019 and 1,158 shares at January 28, 2018	89	89
Paid-in capital	10,578	10,192
Retained earnings	46,423	39,935
Accumulated other comprehensive loss	(772)	(566)
Treasury stock, at cost, 677 shares at February 3, 2019 and 622 shares at January 28, 2018	<u>(58,196)</u>	<u>(48,196)</u>
Total stockholders' (deficit) equity	<u>(1,878)</u>	<u>1,454</u>
Total liabilities and stockholders' equity	<u>\$ 44,003</u>	<u>\$ 44,529</u>

See accompanying notes to consolidated financial statements.

THE HOME DEPOT, INC.
CONSOLIDATED STATEMENTS OF EARNINGS

<i>in millions, except per share data</i>	Fiscal 2018	Fiscal 2017	Fiscal 2016
Net sales	\$ 108,203	\$ 100,904	\$ 94,595
Cost of sales	71,043	66,548	62,282
Gross profit	<u>37,160</u>	<u>34,356</u>	<u>32,313</u>
Operating expenses:			
Selling, general and administrative	19,513	17,864	17,132
Depreciation and amortization	1,870	1,811	1,754
Impairment loss	247	—	—
Total operating expenses	<u>21,630</u>	<u>19,675</u>	<u>18,886</u>
Operating income	<u>15,530</u>	<u>14,681</u>	<u>13,427</u>
Interest and other (income) expense:			
Interest and investment income	(93)	(74)	(36)
Interest expense	1,051	1,057	972
Other	16	—	—
Interest and other, net	<u>974</u>	<u>983</u>	<u>936</u>
Earnings before provision for income taxes	14,556	13,698	12,491
Provision for income taxes	3,435	5,068	4,534
Net earnings	<u>\$ 11,121</u>	<u>\$ 8,630</u>	<u>\$ 7,957</u>
Basic weighted average common shares	1,137	1,178	1,229
Basic earnings per share	\$ 9.78	\$ 7.33	\$ 6.47
Diluted weighted average common shares	1,143	1,184	1,234
Diluted earnings per share	\$ 9.73	\$ 7.29	\$ 6.45

Fiscal 2018 includes 53 weeks. Fiscal 2017 and fiscal 2016 include 52 weeks.

See accompanying notes to consolidated financial statements.

THE HOME DEPOT, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

<i>in millions</i>	Fiscal 2018	Fiscal 2017	Fiscal 2016
Net earnings	\$ 11,121	\$ 8,630	\$ 7,957
Other comprehensive (loss) income:			
Foreign currency translation adjustments	(267)	311	(3)
Cash flow hedges, net of tax	53	(1)	34
Other	8	(9)	—
Total other comprehensive (loss) income	<u>(206)</u>	<u>301</u>	<u>31</u>
Comprehensive income	<u>\$ 10,915</u>	<u>\$ 8,931</u>	<u>\$ 7,988</u>

Fiscal 2018 includes 53 weeks. Fiscal 2017 and fiscal 2016 include 52 weeks.

See accompanying notes to consolidated financial statements.

THE HOME DEPOT, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

<i>in millions</i>	Fiscal 2018	Fiscal 2017	Fiscal 2016
Common Stock:			
Balance at beginning of year	\$ 89	\$ 88	\$ 88
Shares issued under employee stock plans	—	1	—
Balance at end of year	<u>89</u>	<u>89</u>	<u>88</u>
Paid-in Capital:			
Balance at beginning of year	10,192	9,787	9,347
Shares issued under employee stock plans	104	132	76
Tax effect of stock-based compensation	—	—	97
Stock-based compensation expense	<u>282</u>	<u>273</u>	<u>267</u>
Balance at end of year	<u>10,578</u>	<u>10,192</u>	<u>9,787</u>
Retained Earnings:			
Balance at beginning of year	39,935	35,519	30,973
Cumulative effect of accounting change	75	—	—
Net earnings	11,121	8,630	7,957
Cash dividends	(4,704)	(4,212)	(3,404)
Other	<u>(4)</u>	<u>(2)</u>	<u>(7)</u>
Balance at end of year	<u>46,423</u>	<u>39,935</u>	<u>35,519</u>
Accumulated Other Comprehensive Income (Loss):			
Balance at beginning of year	(566)	(867)	(898)
Foreign currency translation adjustments	(267)	311	(3)
Cash flow hedges, net of tax	53	(1)	34
Other	<u>8</u>	<u>(9)</u>	<u>—</u>
Balance at end of year	<u>(772)</u>	<u>(566)</u>	<u>(867)</u>
Treasury Stock:			
Balance at beginning of year	(48,196)	(40,194)	(33,194)
Repurchases of common stock	<u>(10,000)</u>	<u>(8,002)</u>	<u>(7,000)</u>
Balance at end of year	<u>(58,196)</u>	<u>(48,196)</u>	<u>(40,194)</u>
Total stockholders' (deficit) equity	<u>\$ (1,878)</u>	<u>\$ 1,454</u>	<u>\$ 4,333</u>

Fiscal 2018 includes 53 weeks. Fiscal 2017 and fiscal 2016 include 52 weeks.

See accompanying notes to consolidated financial statements.

THE HOME DEPOT, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS

<i>in millions</i>	Fiscal 2018	Fiscal 2017	Fiscal 2016
Cash Flows from Operating Activities:			
Net earnings	\$ 11,121	\$ 8,630	\$ 7,957
Reconciliation of net earnings to net cash provided by operating activities:			
Depreciation and amortization	2,152	2,062	1,973
Stock-based compensation expense	282	273	267
Impairment loss	247	—	—
Changes in receivables, net	33	139	(138)
Changes in merchandise inventories	(1,244)	(84)	(769)
Changes in other current assets	(257)	(10)	(48)
Changes in accounts payable and accrued expenses	743	352	446
Changes in deferred revenue	80	128	99
Changes in income taxes payable	(42)	29	109
Changes in deferred income taxes	26	92	(117)
Other operating activities	(103)	420	4
Net cash provided by operating activities	13,038	12,031	9,783
Cash Flows from Investing Activities:			
Capital expenditures, net of non-cash capital expenditures	(2,442)	(1,897)	(1,621)
Payments for businesses acquired, net	(21)	(374)	—
Proceeds from sales of property and equipment	33	47	38
Other investing activities	14	(4)	—
Net cash used in investing activities	(2,416)	(2,228)	(1,583)
Cash Flows from Financing Activities:			
(Repayments of) proceeds from short-term debt, net	(220)	850	360
Proceeds from long-term debt, net of discounts	3,466	2,991	4,959
Repayments of long-term debt	(1,209)	(543)	(3,045)
Repurchases of common stock	(9,963)	(8,000)	(6,880)
Proceeds from sales of common stock	236	255	218
Cash dividends	(4,704)	(4,212)	(3,404)
Other financing activities	(26)	(211)	(78)
Net cash used in financing activities	(12,420)	(8,870)	(7,870)
Change in cash and cash equivalents	(1,798)	933	330
Effect of exchange rate changes on cash and cash equivalents	(19)	124	(8)
Cash and cash equivalents at beginning of year	3,595	2,538	2,216
Cash and cash equivalents at end of year	\$ 1,778	\$ 3,595	\$ 2,538
Supplemental Disclosures:			
Cash paid for income taxes	\$ 3,774	\$ 4,732	\$ 4,623
Cash paid for interest, net of interest capitalized	1,035	991	924
Non-cash capital expenditures	248	150	179

Fiscal 2018 includes 53 weeks. Fiscal 2017 and fiscal 2016 include 52 weeks.

See accompanying notes to consolidated financial statements.

THE HOME DEPOT, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Business

The Home Depot, Inc., together with its subsidiaries (the "Company," "Home Depot," "we," "our" or "us"), is a home improvement retailer that sells a wide assortment of building materials, home improvement products, lawn and garden products, and décor items and provides a number of services, in stores and online. We operate in the U.S. (including the Commonwealth of Puerto Rico and the territories of the U.S. Virgin Islands and Guam), Canada, and Mexico.

Consolidation and Presentation

Our consolidated financial statements include our accounts and those of our wholly-owned subsidiaries. All significant intercompany transactions have been eliminated in consolidation. Certain amounts in prior fiscal years have been reclassified to conform with the presentation adopted in the current fiscal year. Our fiscal year is a 52- or 53-week period ending on the Sunday nearest to January 31. Fiscal 2018 includes 53 weeks compared to fiscal 2017 and fiscal 2016, both of which include 52 weeks.

Use of Estimates

We have made a number of estimates and assumptions relating to the reporting of assets and liabilities, the disclosure of contingent assets and liabilities, and reported amounts of revenues and expenses in preparing these financial statements in conformity with GAAP. Actual results could differ from these estimates.

Cash Equivalents

We consider all highly liquid investments purchased with original maturities of three months or less to be cash equivalents. Our cash equivalents are carried at fair market value and consist primarily of money market funds.

Receivables

The components of receivables, net, follow.

<i>in millions</i>	February 3, 2019	January 28, 2018
Card receivables	\$ 696	\$ 734
Rebate receivables	660	609
Customer receivables	284	261
Other receivables	296	348
Receivables, net	\$ 1,936	\$ 1,952

Card receivables consist of payments due from financial institutions for the settlement of credit card and debit card transactions. Rebate receivables represent amounts due from vendors for volume and co-op advertising rebates. Receivables due from customers relate to credit extended directly to certain customers in the ordinary course of business. The valuation reserve related to accounts receivable was not material to our consolidated financial statements at the end of fiscal 2018 or fiscal 2017.

Merchandise Inventories

The majority of our merchandise inventories are stated at the lower of cost (first-in, first-out) or market, as determined by the retail inventory method. As the inventory retail value is adjusted regularly to reflect market conditions, the inventory valued using the retail method approximates the lower of cost or market. Certain subsidiaries, including retail operations in Canada and Mexico, and distribution centers, record merchandise inventories at the lower of cost or net realizable value, as determined by a cost method. These merchandise inventories represent approximately 29% of the total merchandise inventories balance. We evaluate the inventory valued using a cost method at the end of each quarter to ensure that it is carried at the lower of cost or net realizable value. The valuation allowance for merchandise inventories valued under a cost method was not material to our consolidated financial statements at the end of fiscal 2018 or fiscal 2017.

Independent physical inventory counts or cycle counts are taken on a regular basis in each store and distribution center to ensure that amounts reflected in merchandise inventories are properly stated. Shrink (or in the case of

excess inventory, "swell") is the difference between the recorded amount of inventory and the physical inventory. We calculate shrink based on actual inventory losses occurring as a result of physical inventory counts during each fiscal period and estimated inventory losses occurring between physical inventory counts. The estimate for shrink occurring in the interim period between physical inventory counts is calculated on a store-specific basis based on recent shrink results and current trends in the business.

Property and Equipment, including Capitalized Lease Assets

Buildings, furniture, fixtures, and equipment are recorded at cost and depreciated using the straight-line method over their estimated useful lives. Leasehold improvements are amortized using the straight-line method over the original term of the lease or the useful life of the improvement, whichever is shorter. The estimated useful lives of our property and equipment follow.

	Life
Buildings	5 – 45 years
Furniture, fixtures and equipment	2 – 20 years
Leasehold improvements	5 – 45 years

We capitalize certain costs related to the acquisition and development of software and amortize these costs using the straight-line method over the estimated useful life of the software, which is three to six years. Certain development costs not meeting the criteria for capitalization are expensed as incurred.

We evaluate our long-lived assets each quarter for indicators of potential impairment. Indicators of impairment include current period losses combined with a history of losses, our decision to relocate or close a store or other location before the end of its previously estimated useful life, or when changes in other circumstances indicate the carrying amount of an asset may not be recoverable. The evaluation for long-lived assets is performed at the lowest level of identifiable cash flows, which is generally the individual store level. The assets of a store with indicators of impairment are evaluated for recoverability by comparing its undiscounted future cash flows with its carrying value. If the carrying value is greater than the undiscounted future cash flows, we then measure the asset's fair value to determine whether an impairment loss should be recognized. If the resulting fair value is less than the carrying value, an impairment loss is recognized for the difference between the carrying value and the estimated fair value. Impairment losses on property and equipment are recorded as a component of SG&A. When a leased location closes, we also recognize, in SG&A, the net present value of future lease obligations less estimated sublease income. Impairments and lease obligation costs on closings and relocations were not material to our consolidated financial statements in fiscal 2018, fiscal 2017, or fiscal 2016.

Leases

We categorize leases at their inception as either operating or capital leases. Lease agreements include certain retail locations, office space, warehouse and distribution space, equipment, and vehicles. Most of these leases are operating leases. However, certain retail locations and equipment are leased under capital leases. Short-term and long-term obligations for capital leases are included in the applicable long-term debt category based on maturity. We expense rent related to operating leases on a straight-line basis over the lease term, which commences on the date we have the right to control the property. The cumulative expense recognized on a straight-line basis in excess of the cumulative payments is included in other accrued expenses and other long-term liabilities. Total rent expense for fiscal 2018, fiscal 2017, and fiscal 2016 is net of an immaterial amount of sublease income.

Goodwill

Goodwill represents the excess of purchase price over the fair value of net assets acquired. We do not amortize goodwill, but assess the recoverability of goodwill in the third quarter of each fiscal year, or more often if indicators warrant, by determining whether the fair value of each reporting unit supports its carrying value. Each fiscal year, we may assess qualitative factors to determine whether it is more likely than not that the fair value of each reporting unit is less than its carrying amount as a basis for determining whether it is necessary to complete quantitative impairment assessments, with a quantitative assessment completed at least once every three years. We completed our last quantitative assessment in fiscal 2016.

In fiscal 2018, we completed our annual assessment of the recoverability of goodwill for the U.S., Canada, and Mexico reporting units. We performed qualitative assessments, concluding that the fair value of the reporting units substantially exceeded the respective reporting unit's carrying value, including goodwill. As a result, there were no impairment charges related to goodwill for fiscal 2018, fiscal 2017, or fiscal 2016.

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Changes in the carrying amount of our goodwill follow.

<i>in millions</i>	Fiscal 2018	Fiscal 2017	Fiscal 2016
Goodwill, balance at beginning of year	\$ 2,275	\$ 2,093	\$ 2,102
Acquisitions ⁽¹⁾	4	164	—
Disposition	(15)	—	—
Other ⁽²⁾	(12)	18	(9)
Goodwill, balance at end of year	\$ 2,252	\$ 2,275	\$ 2,093

(1) Includes purchase price allocation adjustments.

(2) Primarily reflects the impact of foreign currency translation.

Other Intangible Assets

We amortize the cost of other finite-lived intangible assets over their estimated useful lives, which range up to 12 years. Intangible assets with indefinite lives are tested in the third quarter of each fiscal year for impairment, or more often if indicators warrant. Intangible assets other than goodwill are included in other assets.

In January 2019, we recognized a pretax impairment loss of \$247 million for certain trade names as a result of a shift in strategy for our MRO business. Our remaining finite-lived and indefinite-lived intangibles were not material at February 3, 2019.

Debt

We record any premiums or discounts associated with an issuance of long-term debt as a direct addition or deduction to the carrying value of the related senior notes. We also record debt issuance costs associated with an issuance of long-term debt as a direct deduction to the carrying value of the related senior notes. Premium, discount, and debt issuance costs are amortized over the term of the respective notes using the effective interest rate method.

Derivatives

We use derivative financial instruments in the management of our interest rate exposure on long-term debt and our exposure to foreign currency fluctuations. For derivatives that are designated as hedges, changes in their fair values that are considered effective are either accounted for in earnings or recognized in other comprehensive income or loss until the hedged item is recognized in earnings, depending on the nature of the hedge. Any ineffective portion of a derivative's change in fair value is immediately recognized in earnings. Financial instruments that do not qualify for hedge accounting are recorded at fair value with unrealized gains or losses reported in earnings. All qualifying derivative financial instruments are recognized at their fair values in either assets or liabilities at the balance sheet date and are reported on a gross basis. The fair values of our derivative financial instruments are discussed in [Note 4](#) and [Note 7](#).

Insurance

We are self-insured for certain losses related to general liability (including product liability), workers' compensation, employee group medical, and automobile claims. We recognize the expected ultimate cost for claims incurred (undiscounted) at the balance sheet date as a liability. The expected ultimate cost for claims incurred is estimated based upon analysis of historical data and actuarial estimates. We also maintain network security and privacy liability insurance coverage to limit our exposure to losses such as those that may be caused by a significant compromise or breach of our data security. Insurance-related expenses are included in SG&A.

Treasury Stock

Treasury stock is reflected as a reduction of stockholders' equity at cost. We use the weighted-average purchase cost to determine the cost of treasury stock that is reissued, if any.

Net Sales

On January 29, 2018, we adopted ASU No. 2014-09 using the modified retrospective transition method which requires that we recognize revenue differently pre- and post-adoption. See "—Recently Adopted Accounting Pronouncements—ASU No. 2014-09" below for more information.

Fiscal 2018 and Subsequent Periods. We recognize revenue, net of expected returns and sales tax, at the time the customer takes possession of merchandise or when a service is performed. The liability for sales returns, including the impact to gross profit, is estimated based on historical return levels and recognized at the transaction price. We also recognize a return asset, and corresponding adjustment to cost of sales, for our right to recover the goods returned by the customer, measured at the former carrying amount of the goods, less any expected recovery cost. At each financial reporting date, we assess our estimates of expected returns, refund liabilities, and return assets.

Net sales include services revenue generated through a variety of installation, home maintenance, and professional service programs. In these programs, the customer selects and purchases material for a project, and we provide or arrange for professional installation. These programs are offered through our stores and in-home sales programs. Under certain programs, when we provide or arrange for the installation of a project and the subcontractor provides material as part of the installation, both the material and labor are included in services revenue. We recognize this revenue when the service for the customer is complete, which is not materially different from recognizing the revenue over the service period as the substantial majority of our services are completed within one week.

For product sold in stores or online, payment is typically due at the point of sale. For services, payment in full is due upon completion of the job. When we receive payment from customers before the customer has taken possession of the merchandise or the service has been performed, the amount received is recorded as deferred revenue until the sale or service is complete. Such performance obligations are part of contracts with expected original durations of three months or less. We further record deferred revenue for the sale of gift cards and recognize the associated revenue upon the redemption of those gift cards in net sales. Gift card breakage income, which is our estimate of the non-redeemed gift card balance, was immaterial in fiscal 2018.

We also have agreements with third-party service providers who directly extend credit to customers and manage our PLCC program. Deferred interest charges incurred for our deferred financing programs offered to these customers, interchange fees charged to us for their use of the cards, and any profit sharing with the third-party service providers are included in net sales.

Fiscal 2017 and Fiscal 2016. We recognize revenue, net of estimated returns and sales tax, at the time the customer takes possession of merchandise or when a service is performed. The liability for sales returns, including the impact to gross profit, is estimated based on historical return levels.

Net sales include services revenue generated through a variety of installation, home maintenance, and professional service programs. In these programs, the customer selects and purchases material for a project, and we provide or arrange professional installation. These programs are offered through our stores and in-home sales programs. Under certain programs, when we provide or arrange the installation of a project and the subcontractor provides material as part of the installation, both the material and labor are included in services revenue. We recognize this revenue when the service for the customer is complete.

When we receive payment from customers before the customer has taken possession of the merchandise or the service has been performed, the amount received is recorded as deferred revenue until the sale or service is complete. We also record deferred revenue for the sale of gift cards and recognize this revenue upon the redemption of gift cards in net sales. Gift card breakage income, which is our estimate of the non-redeemed gift card balance, was immaterial in fiscal 2017 and fiscal 2016.

Cost of Sales

Cost of sales includes the actual cost of merchandise sold and services performed; the cost of transportation of merchandise from vendors to our distribution network, stores, or customers; shipping and handling costs from our stores or distribution network to customers; and the operating cost and depreciation of our sourcing and distribution network and online fulfillment centers. In fiscal 2017 and fiscal 2016, cost of sales also included cost of deferred interest programs offered through our PLCC programs.

Cost of Credit

We have agreements with third-party service providers who directly extend credit to customers, manage our PLCC program, and own the related receivables. We have evaluated the third-party entities holding the receivables under the program and concluded that they should not be consolidated. The agreement with the primary third-party service provider for our PLCC program expires in 2028, with us having the option, but no obligation, to purchase the receivables at the end of the agreement. The deferred interest charges we incur for our deferred financing programs offered to our customers are included in net sales in fiscal 2018 and subsequent periods and in cost of sales in fiscal 2017 and fiscal 2016. The interchange fees charged to us for our customers' use of the cards and any profit

sharing with the third-party service providers are included in net sales in fiscal 2018 and subsequent periods and in SG&A in fiscal 2017 and fiscal 2016. The sum of the deferred interest charges, interchange fees, and any profit sharing is referred to as the cost of credit of the PLCC program.

Vendor Allowances

Vendor allowances primarily consist of volume rebates that are earned as a result of attaining certain purchase levels and co-op advertising allowances for the promotion of vendors' products that are typically based on guaranteed minimum amounts with additional amounts being earned for attaining certain purchase levels. These vendor allowances are accrued as earned, with those allowances received as a result of attaining certain purchase levels accrued over the incentive period based on estimates of purchases. Volume rebates and certain co-op advertising allowances earned are initially recorded as a reduction in merchandise inventories and a subsequent reduction in cost of sales when the related product is sold.

Certain other co-op advertising allowances that are reimbursements of specific, incremental, and identifiable costs incurred to promote vendors' products are recorded as an offset against advertising expense in SG&A. The co-op advertising allowances recorded as an offset to advertising expense follow.

<i>in millions</i>	Fiscal 2018	Fiscal 2017	Fiscal 2016
Specific, incremental, and identifiable co-op advertising allowances	\$ 235	\$ 198	\$ 166

Advertising Expense

Television and radio advertising production costs, along with media placement costs, are expensed when the advertisement first appears. Certain co-op advertising allowances are recorded as an offset against advertising expense. Gross advertising expense included in SG&A follows.

<i>in millions</i>	Fiscal 2018	Fiscal 2017	Fiscal 2016
Gross advertising expense	\$ 1,156	\$ 995	\$ 955

Stock-Based Compensation

We are currently authorized to issue incentive and nonqualified stock options, stock appreciation rights, restricted stock, restricted stock units, performance shares, performance units, and deferred shares to certain of our associates, officers, and directors under certain stock incentive plans. We measure and recognize compensation expense for all share-based payment awards made to associates and directors based on estimated fair values. The value of the portion of the award that is ultimately expected to vest is recognized as stock-based compensation expense over the requisite service period or as restrictions lapse. Additional information on our stock-based payment awards is included in [Note 8](#).

Income Taxes

Income taxes are accounted for under the asset and liability method. We provide for federal, state, and foreign income taxes currently payable, as well as for those deferred due to timing differences between reporting income and expenses for financial statement purposes versus tax purposes. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to temporary differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. Deferred tax assets and liabilities are measured using enacted income tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect of a change in income tax rates is recognized as income or expense in the period that includes the enactment date.

We recognize the effect of income tax positions only if those positions are more likely than not of being sustained. Recognized income tax positions are measured at the largest amount that is greater than 50% likely of being realized. Changes in recognition or measurement are reflected in the period in which the change in judgment occurs.

We file a consolidated U.S. federal income tax return which includes certain eligible subsidiaries. Non-U.S. subsidiaries and certain U.S. subsidiaries, which are consolidated for financial reporting purposes, are not eligible to be included in our consolidated U.S. federal income tax return. Separate provisions for income taxes have been determined for these entities. For unremitted earnings of our non-U.S. subsidiaries, we are required to make an assertion regarding reinvestment or repatriation for tax purposes. For any earnings that we do not make a

permanent reinvestment assertion, we recognize a provision for deferred income taxes. For earnings where we have made a permanent reinvestment assertion, no provision is recognized. See [Note 5](#) for further discussion.

Comprehensive Income

Comprehensive income includes net earnings adjusted for certain gains and losses that are excluded from net earnings under GAAP, which consists primarily of foreign currency translation adjustments.

Foreign Currency Translation

Assets and liabilities denominated in a foreign currency are translated into U.S. dollars at the current rate of exchange on the last day of the reporting period. Revenues and expenses are translated using average exchange rates for the period and equity transactions are translated using the actual rate on the day of the transaction.

Reclassifications

Certain prior period amounts have been reclassified to conform to the current period's financial statement presentation. See "Recently Adopted Accounting Pronouncements" below for a discussion of our adoption of new accounting standards.

Recently Adopted Accounting Pronouncements

ASU No. 2016-16. In October 2016, the FASB issued ASU No. 2016-16, "Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory," which requires an entity to recognize the income tax consequences of an intercompany transfer of assets other than inventory when the transfer occurs. An entity will continue to recognize the income tax consequences of an intercompany transfer of inventory when the inventory is sold to a third party.

On January 29, 2018, we adopted ASU No. 2016-16 using the modified retrospective transition method with no impact on our consolidated financial statements. We expect the impact of the adoption to be immaterial to our financial position, results of operations, and cash flows on an ongoing basis.

ASU No. 2014-09. In May 2014, the FASB issued a new standard related to revenue recognition. Under ASU No. 2014-09, "Revenue from Contracts with Customers (Topic 606)," revenue is recognized when a customer obtains control of promised goods or services in an amount that reflects the consideration the entity expects to receive in exchange for those goods or services. In addition, the standard requires disclosure of the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. On January 29, 2018, we adopted ASU No. 2014-09 using the modified retrospective transition method.

In preparation for implementation of the standard, we finalized key accounting assessments and then implemented internal controls and updated processes to appropriately recognize and present the associated financial information. Based on these efforts, we determined that the adoption of ASU No. 2014-09 changes the presentation of (i) certain expenses and cost reimbursements associated with our PLCC program (now recognized in net sales), (ii) certain expenses related to the sale of gift cards to customers (now recognized in operating expense), and (iii) gift card breakage income (now recognized in net sales). We also have changed our recognition of gift card breakage income to be recognized proportionately as redemption occurs, rather than based on historical redemption patterns.

In addition, the adoption of ASU No. 2014-09 requires that we recognize our sales return allowance on a gross basis rather than as a net liability. As such, we now recognize (i) a return asset for the right to recover the goods returned by the customer, measured at the former carrying amount of the goods, less any expected recovery costs (recorded as an increase to other current assets) and (ii) a return liability for the amount of expected returns (recorded as an increase to other accrued expenses and a decrease to receivables, net).

We applied ASU No. 2014-09 only to contracts that were not completed prior to fiscal 2018. The cumulative effect of initially applying ASU No. 2014-09 was a \$99 million reduction to deferred revenue, a \$24 million increase to deferred income taxes (included in other long-term liabilities), and a \$75 million increase to the opening balance of retained earnings as of January 29, 2018. The comparative prior period information continues to be reported under the accounting standards in effect during those periods. We expect the impact of the adoption to be immaterial to our financial position, results of operations, and cash flows on an ongoing basis.

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Excluding the effect of the opening balance sheet adjustment noted above, the impact of the adoption of ASU No. 2014-09 on our consolidated balance sheet as of February 3, 2019 follows.

<i>in millions</i>	As Reported	ASU No. 2014-09 Impact	Excluding ASU No. 2014-09 Impact
Receivables, net	\$ 1,936	\$ (40)	\$ 1,976
Other current assets	890	256	634
Other accrued expenses	2,611	216	2,395

The impact of the adoption of ASU No. 2014-09 on our consolidated statements of earnings for fiscal 2018 follows.

<i>in millions</i>	As Reported	ASU No. 2014-09 Impact	Excluding ASU No. 2014-09 Impact
Net sales	\$ 108,203	\$ 216	\$ 107,987
Cost of sales	71,043	(382)	71,425
Gross profit	37,160	598	36,562
Selling, general and administrative	19,513	598	18,915

Recently Issued Accounting Pronouncements

ASU No. 2018-15. In August 2018, the FASB issued ASU No. 2018-15, "Intangibles – Goodwill and Other – Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That is a Service Contract," which aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. ASU No. 2018-15 is effective for us in the first quarter of fiscal 2020 and early adoption is permitted. We are evaluating the effect that ASU No. 2018-15 will have on our consolidated financial statements and related disclosures.

ASU No. 2018-02. In February 2018, the FASB issued ASU No. 2018-02, "Income Statement – Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income," which allows for an optional reclassification from accumulated other comprehensive income to retained earnings for stranded tax effects as a result of the Tax Act. ASU No. 2018-02 is effective for us in the first quarter of fiscal 2019 and early adoption is permitted. Two transition methods are available: at the beginning of the period of adoption, or retrospective to each period in which the income tax effects of the Tax Act related to items remaining in accumulated other comprehensive income are recognized. We will adopt this standard in the first quarter of 2019, applying the adjustment at the beginning of the period of adoption. We have evaluated the effect that ASU No. 2018-02 will have on our consolidated financial statements and related disclosures and noted no material impact.

ASU No. 2017-12. In August 2017, the FASB issued ASU No. 2017-12, "Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities," which amends the hedge accounting recognition and presentation requirements. ASU No. 2017-12 eliminates the concept of recognizing periodic hedge ineffectiveness for cash flow and net investment hedges and allows an entity to apply the shortcut method to partial-term fair value hedges of interest rate risk. ASU No. 2017-12 is effective for us in the first quarter of fiscal 2019. Early adoption is permitted in any interim period after issuance of this update. We have evaluated the effect that ASU No. 2017-12 will have on our consolidated financial statements and related disclosures and noted no material impact.

ASU No. 2017-04. In January 2017, the FASB issued ASU No. 2017-04, "Intangibles—Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment," which simplifies how an entity is required to test goodwill for impairment. The amendments in ASU No. 2017-04 require goodwill impairment to be measured using the difference between the carrying amount and the fair value of the reporting unit and require the loss recognized to not exceed the total amount of goodwill allocated to that reporting unit. ASU No. 2017-04 should be applied on a prospective basis and is effective for our annual goodwill impairment tests beginning in the first quarter of fiscal 2020. Early adoption is permitted. We have evaluated the effect that ASU No. 2017-04 will have on our consolidated financial statements and related disclosures and noted no material impact.

ASU No. 2016-02. In February 2016, the FASB issued ASU No. 2016-02, "Leases (Topic 842)," which establishes a right-of-use model and requires an entity that is a lessee to recognize the right-of-use assets and liabilities arising from leases on its balance sheet. ASU No. 2016-02 also requires disclosures about the amount, timing, and

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The approximate future minimum lease payments under capital and operating leases at February 3, 2019 follow.

<i>in millions</i>	Operating Leases	Capital Leases
Fiscal 2019	\$ 976	\$ 150
Fiscal 2020	912	167
Fiscal 2021	792	143
Fiscal 2022	682	142
Fiscal 2023	584	137
Thereafter	3,090	970
	<u>\$ 7,036</u>	<u>1,709</u>
Less imputed interest		660
Net present value of capital lease obligations		1,049
Less current installments		57
Long-term capital lease obligations, excluding current installments	<u>\$ 992</u>	

4. DEBT AND DERIVATIVE INSTRUMENTS

Short-Term Debt

We have commercial paper programs with an aggregate borrowing capacity of \$3.0 billion. All of our short-term borrowings in fiscal 2018 and fiscal 2017 were under these commercial paper programs. In connection with these programs, we have back-up credit facilities with a consortium of banks for borrowings up to \$3.0 billion, which consist of a 364-day \$1.0 billion credit facility and a five-year \$2.0 billion credit facility. In December 2018, we completed the renewal of our 364-day \$1.0 billion credit facility, extending the maturity from December 2018 to December 2019. In December 2017, we replaced our five-year \$2.0 billion credit facility that was scheduled to expire in December 2019, with a new, substantially identical five-year \$2.0 billion credit facility that expires in December 2022.

Certain information on our commercial paper programs follows.

<i>dollars in millions</i>	February 3, 2019	January 28, 2018
Weighted average interest rate	2.41%	1.45%
Balance outstanding at fiscal year-end	\$ 1,339	\$ 1,559
Maximum amount outstanding at any month-end	\$ 2,264	\$ 1,559
Average daily short-term borrowings	\$ 621	\$ 173

Long-Term Debt

Details of the components of our long-term debt follow.

<i>in millions</i>	Interest Payable	Principal Amount	Carrying Amount	
			February 3, 2019	January 28, 2018
2.25% Senior notes due September 2018	Semi-annually	\$ —	\$ —	\$ 1,150
2.00% Senior notes due June 2019	Semi-annually	1,000	999	998
Floating rate senior notes due June 2020	Quarterly	500	499	499
1.80% Senior notes due June 2020	Semi-annually	750	749	748
3.95% Senior notes due September 2020	Semi-annually	500	499	501
4.40% Senior notes due April 2021	Semi-annually	1,000	999	998
2.00% Senior notes due April 2021	Semi-annually	1,350	1,345	1,343
Floating rate senior notes due March 2022	Quarterly	300	299	—
3.25% Senior notes due March 2022	Semi-annually	700	696	—
2.625% Senior notes due June 2022	Semi-annually	1,250	1,245	1,243
2.70% Senior notes due April 2023	Semi-annually	1,000	997	996
3.75% Senior notes due February 2024	Semi-annually	1,100	1,094	1,093
3.35% Senior notes due September 2025	Semi-annually	1,000	995	995
3.00% Senior notes due April 2026	Semi-annually	1,300	1,288	1,287
2.125% Senior notes due September 2026	Semi-annually	1,000	987	986
2.80% Senior notes due September 2027	Semi-annually	1,000	981	980
3.90% Senior notes due December 2028	Semi-annually	1,000	1,005	—
5.875% Senior notes due December 2036	Semi-annually	3,000	2,951	2,949
5.40% Senior notes due September 2040	Semi-annually	500	495	495
5.95% Senior notes due April 2041	Semi-annually	1,000	989	988
4.20% Senior notes due April 2043	Semi-annually	1,000	989	988
4.875% Senior notes due February 2044	Semi-annually	1,000	979	978
4.40% Senior notes due March 2045	Semi-annually	1,000	977	977
4.25% Senior notes due April 2046	Semi-annually	1,600	1,585	1,584
3.90% Senior notes due June 2047	Semi-annually	750	738	738
4.50% Senior notes due December 2048	Semi-annually	1,500	1,462	—
3.50% Senior notes due September 2056	Semi-annually	1,000	972	971
Total senior notes		\$ 27,100	26,814	24,485
Capital lease obligations; payable in varying installments through January 31, 2055			1,049	984
Total long-term debt			27,863	25,469
Less current installments of long-term debt			1,056	1,202
Long-term debt, excluding current installments			\$ 26,807	\$ 24,267

December 2018 Issuance. In December 2018, we issued four tranches of senior notes.

- The first tranche consisted of \$300 million of floating rate senior notes due March 1, 2022 (the "2022 floating rate notes"). The 2022 floating rate notes bear interest at a variable rate determined quarterly equal to the three-month LIBOR plus 31 basis points. Interest on the 2022 floating rate notes is due quarterly on March 1, June 1, September 1, and December 1 of each year, beginning March 1, 2019.
- The second tranche consisted of \$700 million of 3.25% senior notes due March 1, 2022 (the "2022 notes") at a discount of \$2 million. Interest on the 2022 notes is due semi-annually on March 1 and September 1 of each year, beginning March 1, 2019.

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- The third tranche consisted of \$1.0 billion of 3.90% senior notes due December 6, 2028 (the "2028 notes") at a discount of \$7 million. Interest on the 2028 notes is due semi-annually on June 6 and December 6 of each year, beginning June 6, 2019.
- The fourth tranche consisted of \$1.5 billion of 4.50% senior notes due December 6, 2048 (the "2048 notes") at a discount of \$25 million (together with the 2022 floating rate notes, the 2022 notes and the 2028 notes, the "December 2018 issuance"). Interest on the 2048 notes is due semi-annually on June 6 and December 6 of each year, beginning June 6, 2019.
- Issuance costs totaled \$22 million. The net proceeds of the December 2018 issuance will be used for general corporate purposes, including repurchases of common stock.

September 2017 Issuance. In September 2017, we issued a single tranche of senior notes.

- The tranche consisted of \$1.0 billion of 2.80% senior notes due September 14, 2027 (the "2027 notes" and the "September 2017 issuance") at a discount of \$3 million. Interest on the 2027 notes is due semi-annually on March 14 and September 14 of each year, beginning March 14, 2018.
- Issuance costs totaled \$6 million. The net proceeds of the September 2017 issuance were used to repay our floating rate notes due September 15, 2017, and for general corporate purposes, including repurchases of our common stock.

June 2017 Issuance. In June 2017, we issued three tranches of senior notes.

- The first tranche consisted of \$500 million of floating rate senior notes due June 5, 2020 (the "2020 floating rate notes"). The 2020 floating rate notes bear interest at a variable rate determined quarterly equal to the three-month LIBOR plus 15 basis points. Interest on the 2020 floating rate notes is due quarterly on March 5, June 5, September 5, and December 5 of each year, beginning September 5, 2017.
- The second tranche consisted of \$750 million of 1.80% senior notes due June 5, 2020 (the "2020 notes") at a discount of \$1 million. Interest on the 2020 notes is due semi-annually on June 5 and December 5 of each year, beginning December 5, 2017.
- The third tranche consisted of \$750 million of 3.90% senior notes due June 15, 2047 (the "2047 notes") at a discount of \$5 million (together with the 2020 floating rate notes and the 2020 notes, the "June 2017 issuance"). Interest on the 2047 notes is due semi-annually on June 15 and December 15 of each year, beginning December 15, 2017.
- Issuance costs totaled \$12 million. The net proceeds of the June 2017 issuance were used for general corporate purposes, including repurchases of our common stock.

Redemption. All of our senior notes, other than our outstanding floating rate notes, may be redeemed by us at any time, in whole or in part, at the redemption price plus accrued interest up to the redemption date. With respect to the 2020 notes and the 2022 notes, the redemption price is equal to the greater of (1) 100% of the principal amount of the notes to be redeemed, or (2) the sum of the present values of the remaining scheduled payments of principal and interest on the notes to be redeemed that would be due after the related redemption date. With respect to all other notes, the redemption price is equal to the greater of (1) 100% of the principal amount of the notes to be redeemed, or (2) the sum of the present values of the remaining scheduled payments of principal and interest to the Par Call Date, as defined in the respective notes. Additionally, if a Change in Control Triggering Event occurs, as defined in the notes, holders of all notes have the right to require us to redeem those notes at 101% of the aggregate principal amount of the notes plus accrued interest up to the redemption date. We are generally not limited under the indentures governing the notes in our ability to incur additional indebtedness or required to maintain financial ratios or specified levels of net worth or liquidity. The indentures governing the notes contain various customary covenants; however, none are expected to impact our liquidity or capital resources.

Maturities of Long-Term Debt. Our long-term debt maturities, excluding capital leases, follow.

<i>in millions</i>	<i>Principal</i>
Fiscal 2019	\$ 1,000
Fiscal 2020	1,750
Fiscal 2021	2,350
Fiscal 2022	2,250
Fiscal 2023	1,000
Thereafter	18,750

Derivative Instruments

We had outstanding cross currency swap agreements with a combined notional amount of \$326 million at February 3, 2019 and \$626 million at January 28, 2018, accounted for as cash flow hedges, to hedge foreign currency fluctuations on certain intercompany debt. The approximate fair values of these agreements were assets of \$121 million at February 3, 2019 and \$233 million at January 28, 2018, which were the estimated amounts we would have received to settle the agreements and were included in other assets.

We had outstanding interest rate swap agreements with combined notional amounts of \$1.3 billion at both February 3, 2019 and January 28, 2018. These agreements were accounted for as fair value hedges that swap fixed for variable rate interest to hedge changes in the fair values of certain senior notes. The fair values of these agreements were not material at February 3, 2019 and January 28, 2018.

We had outstanding foreign currency forward contracts with a combined notional amount of \$16 million at February 3, 2019. These agreements were accounted for as cash flow hedges that hedge the variability of forecasted cash flow associated with certain payments made in our foreign operations. At January 28, 2018, we had outstanding foreign currency forward contracts with a combined notional amount of \$300 million. These agreements were accounted for as net investment hedges that hedge against foreign currency exposure on our net investment in certain subsidiaries and were all settled during fiscal 2018. At February 3, 2019 and January 28, 2018, the fair values of these agreements were not material.

5. INCOME TAXES

Tax Reform

On December 22, 2017, the U.S. enacted comprehensive tax legislation with the Tax Act, making broad and complex changes to U.S. tax law, including lowering the U.S. corporate income tax rate to 21%, transitioning to a modified territorial system, and providing for current expensing of certain qualifying capital expenditures. Also in December 2017, the SEC issued Staff Accounting Bulletin No. 118 ("SAB 118") to address the application of GAAP in situations when a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the Tax Act. As disclosed in our 2017 Form 10-K, we were able to reasonably estimate certain effects and, therefore, recorded a total provisional charge of \$127 million. The provisional charge included (i) a charge for the deemed repatriation of historical earnings of foreign subsidiaries, (ii) a provisional benefit for the remeasurement of deferred tax assets and liabilities, and (iii) an estimated benefit due to a lower U.S. statutory tax rate. As of February 3, 2019, we have completed our accounting for all of the enactment-date income tax effects of the Tax Act. During fiscal 2018, we adjusted the provisional charge by a net benefit of \$85 million, for a final tax charge of \$42 million. These adjustments were made upon our further analysis of certain aspects of the Tax Act, refinement of our calculations, and the issuance of guidance by the U.S. Department of the Treasury. The components of the provisional charge recognized in fiscal 2017 and the adjustments made during fiscal 2018 follow.

<i>in millions</i>	Deemed Repatriation	Deferred Tax Remeasurement	Statutory Tax Rate Impact	Total
Provisional tax charge (benefit) - recognized in fiscal 2017	\$ 400	\$ (147)	\$ (126)	\$ 127
Tax charge (benefit) adjustment - finalized in fiscal 2018	(62)	(22)	(1)	(85)
Total tax charge (benefit)	\$ 338	\$ (169)	\$ (127)	\$ 42

We have elected to pay our transition tax over the eight-year period provided in the Tax Act. As of February 3, 2019, the remaining balance of our transition tax obligation was \$14 million, after required application of overpayments.

The Tax Act also created a new requirement that certain income (referred to as global intangible low-taxed income or "GILTI") earned by controlled foreign corporations, or CFCs, must be included currently in the gross income of the CFCs' U.S. shareholder. Due to the complexity of the new GILTI tax rules, we recorded no GILTI related deferred taxes as of January 28, 2018. After further considerations in fiscal 2018, we have elected to account for GILTI in the period the tax is incurred.

We expect additional regulatory guidance and technical clarifications from the U.S. Department of the Treasury and IRS within the next 12 months. Any subsequent adjustment to these amounts will be recorded to the provision for income taxes in the period in which the guidance is issued or finalized.

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Provision for Income Taxes

Our earnings before the provision for income taxes follow.

<i>in millions</i>	Fiscal 2018	Fiscal 2017	Fiscal 2016
U.S.	\$ 13,456	\$ 12,682	\$ 11,568
Foreign	1,100	1,016	923
Total	<u>\$ 14,556</u>	<u>\$ 13,698</u>	<u>\$ 12,491</u>

Our provision for income taxes follows.

<i>in millions</i>	Fiscal 2018	Fiscal 2017	Fiscal 2016
Current:			
Federal	\$ 2,495	\$ 4,128	\$ 3,870
State	544	499	462
Foreign	372	331	315
Total current	<u>3,411</u>	<u>4,958</u>	<u>4,647</u>
Deferred:			
Federal	67	(67)	(102)
State	1	89	13
Foreign	(44)	88	(24)
Total deferred	<u>24</u>	<u>110</u>	<u>(113)</u>
Provision for income taxes	<u><u>\$ 3,435</u></u>	<u><u>\$ 5,068</u></u>	<u><u>\$ 4,534</u></u>

Our combined federal, state, and foreign effective tax rates follow.

	Fiscal 2018	Fiscal 2017	Fiscal 2016
Combined federal, state, and foreign effective tax rates	23.6%	37.0%	36.3%

The reconciliation of our provision for income taxes at the federal statutory rates of 21% for fiscal 2018, approximately 34% for fiscal 2017, and 35% for fiscal 2016 to the actual tax expense follows.

<i>in millions</i>	Fiscal 2018	Fiscal 2017	Fiscal 2016
Income taxes at federal statutory rate	\$ 3,057	\$ 4,648	\$ 4,372
State income taxes, net of federal income tax benefit	443	369	309
Tax on mandatory deemed repatriation	(62)	400	—
Other, net	(3)	(349)	(147)
Total	<u><u>\$ 3,435</u></u>	<u><u>\$ 5,068</u></u>	<u><u>\$ 4,534</u></u>

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Deferred Taxes

The tax effects of temporary differences that give rise to significant portions of our deferred tax assets and deferred tax liabilities follow.

<i>in millions</i>	February 3, 2019	January 28, 2018
Assets:		
Deferred compensation	\$ 183	\$ 185
Accrued self-insurance liabilities	298	295
State income taxes	96	109
Non-deductible reserves	231	220
Net operating losses	17	19
Other	116	124
Total deferred tax assets	<u>941</u>	<u>952</u>
Valuation allowance	—	—
Total deferred tax assets after valuation allowance	<u>941</u>	<u>952</u>
Liabilities:		
Merchandise inventories	(9)	(9)
Property and equipment	(893)	(770)
Goodwill and other intangibles	(179)	(243)
Other	(230)	(251)
Total deferred tax liabilities	<u>(1,311)</u>	<u>(1,273)</u>
Net deferred tax liabilities	<u>\$ (370)</u>	<u>\$ (321)</u>

Our noncurrent deferred tax assets and noncurrent deferred tax liabilities, netted by tax jurisdiction, follow.

<i>in millions</i>	February 3, 2019	January 28, 2018
Other assets	\$ 121	\$ 119
Deferred income taxes	(491)	(440)
Net deferred tax liabilities	<u>\$ (370)</u>	<u>\$ (321)</u>

We believe that the realization of the deferred tax assets is more likely than not, based upon the expectation that we will generate the necessary taxable income in future periods.

At February 3, 2019, we had federal, state, and foreign net operating loss carryforwards available to reduce future taxable income, expiring at various dates beginning in 2019 to 2038. We have concluded that it is more likely than not that the tax benefits related to the federal, state, and foreign net operating losses will be realized.

Reinvestment of Unremitted Earnings

Substantially all of our current year foreign cash flows in excess of working capital and cash needed for strategic investments are not intended to be indefinitely reinvested offshore. Therefore, the tax effects of repatriation (including applicable state and local taxes and foreign withholding taxes) of such cash flows have been provided for in the accompanying consolidated statements of earnings. We intend to reinvest substantially all of the approximately \$3 billion of non-cash unremitted earnings of our non-U.S. subsidiaries indefinitely. Accordingly, no provision for state and local taxes or foreign withholding taxes was recorded on these unremitted earnings in the accompanying consolidated statements of earnings. It is impracticable for us to determine the amount of unrecognized deferred tax liabilities on these indefinitely reinvested earnings due to the complexities associated with the hypothetical calculation.

Tax Return Examination Status

Our income tax returns are routinely examined by U.S. federal, state and local, and foreign tax authorities. With few exceptions, as of February 3, 2019, the Company is no longer subject to U.S. federal examinations by tax

authorities for years before fiscal 2010. During fiscal 2018, the Company settled a transfer pricing issue between the U.S. and Mexican tax authorities. The resolution of this issue reduced our unrecognized tax benefits by \$89 million. The net impact of the settlement resulted in an immaterial tax charge in fiscal 2018. Our U.S. federal tax returns for fiscal years 2010 through 2014 are currently under examination by the IRS. With respect to these years, the IRS has issued a proposed adjustment relating to transfer pricing between our entities in the U.S. and China. We intend to defend our position using all available remedies including bi-lateral relief. There are also ongoing U.S. state and local audits and other foreign audits covering fiscal years 2005 through 2017. We do not expect the results from any ongoing income tax audit to have a material impact on our consolidated financial condition, results of operations, or cash flows.

Over the next twelve months, it is reasonably possible that the resolution of federal and state tax examinations could reduce our unrecognized tax benefits by \$65 million. Final settlement of these audit issues may result in payments that are more or less than this amount, but we do not anticipate the resolution of these matters will result in a material change to our consolidated financial condition or results of operations.

Unrecognized Tax Benefits

Reconciliations of the beginning and ending amount of our gross unrecognized tax benefits follow.

<i>in millions</i>	Fiscal 2018	Fiscal 2017	Fiscal 2016
Unrecognized tax benefits balance at beginning of fiscal year	\$ 637	\$ 659	\$ 689
Additions based on tax positions related to the current year	91	74	147
Additions for tax positions of prior years	100	15	14
Reductions for tax positions of prior years	(245)	(93)	(161)
Reductions due to settlements	(66)	(1)	(16)
Reductions due to lapse of statute of limitations	(23)	(17)	(14)
Unrecognized tax benefits balance at end of fiscal year	<u>\$ 494</u>	<u>\$ 637</u>	<u>\$ 659</u>

Unrecognized tax benefits that if recognized would affect our annual effective income tax rate on net earnings were \$398 million at February 3, 2019; \$483 million at January 28, 2018; and \$382 million at January 29, 2017.

Interest and Penalties

Net adjustments to accruals for interest and penalties associated with uncertain tax positions resulted in a benefit of \$33 million in fiscal 2018, and expenses of \$24 million in fiscal 2017 and \$20 million in fiscal 2016. Interest and penalties are included in interest expense and SG&A, respectively.

Our total accrued interest and penalties follow.

<i>in millions</i>	February 3, 2019	January 28, 2018
Total accrued interest and penalties	\$ 101	\$ 134

Financial Statement Analysis

Common-Size Financial Statements

- ▶ Balance sheet items as a percentage of _____.
- ▶ Income statement items as a percentage of _____.

**Suzie Q Corporation
Balance Sheet
December 31, 2018**

Assets:			Liabilities & Equity:		
Current Assets:			Current Liabilities:		
Cash	\$ 80	12.5%	Accts. Payable	\$ 95	14.8%
Accounts Rec.	140	21.9%	Notes Payable	<u>110</u>	<u>17.2%</u>
Inventory	<u>155</u>	<u>24.2%</u>	Total CL	\$205	32.0%
Total CA	\$375	58.6%	Long-term Debt:	120	18.8%
Fixed Assets:			Common Stock	40	6.2%
Net Fixed Assets	<u>265</u>	<u>41.4%</u>	Retained Earnings	<u>275</u>	<u>43.0%</u>
Total Assets	<u>\$640</u>	<u>100.0%</u>	Total Liab. & S.E.	<u>\$640</u>	<u>100.0%</u>

**Suzie Q Corporation
Income Statement
For Year Ended December 31, 2018**

Sales	\$910	100.0%
Cost of Goods Sold	470	51.6%
SG&A Expenses	210	23.1%
Depreciation	<u>60</u>	<u>6.6%</u>
EBIT	\$170	18.7%
Interest Expense	<u>40</u>	<u>4.4%</u>
EBT	\$130	14.3%
Taxes	<u>52</u>	<u>5.7%</u>
Net Income	<u>\$78</u>	<u>8.6%</u>

Classification of Financial Ratios

- ▶ Short-term Solvency or Liquidity Ratios
- ▶ Long-term Solvency or Financial Leverage Ratios
- ▶ Asset Management or Turnover Ratios
- ▶ Profitability Ratios
- ▶ Market Value Ratios

Short-term Solvency (Liquidity) Ratios

- ▶ Current Ratio
- ▶ Quick (Acid-Test) Ratio
- ▶ Cash Ratio
- ▶ Net Working Capital to Total Assets
- ▶ Interval Measure

Long-term Solvency (Financial Leverage) Ratios

- ▶ Total Debt Ratio
- ▶ Debt-equity Ratio
- ▶ Equity Multiplier

Long-term Solvency (Financial Leverage) Ratios

- ▶ Long-term Debt Ratio
- ▶ Times Interest Earned (TIE) Ratio
- ▶ Cash Coverage Ratio

Asset Management (Turnover) Ratios

- ▶ Inventory Turnover
- ▶ Days' Sales in Inventory
- ▶ Receivables Turnover
- ▶ Days' Sales in Receivables

Asset Management (Turnover) Ratios

- ▶ Net Working Capital Turnover
- ▶ Fixed Asset Turnover
- ▶ Total Asset Turnover

Profitability Ratios

- ▶ Profit Margin
- ▶ Return on Assets
- ▶ Return on Equity

Market Value Ratios

- ▶ **Earnings Per Share (EPS)*
- ▶ Price-earnings (PE) Ratio
- ▶ Price-sales Ratio
- ▶ Market-to-book Ratio
- ▶ Tobin's Q
- ▶ Enterprise Value-EBITDA Ratio

DuPont Identity

DuPont Identity

- ▶ ROE =
- ▶ With leverage, _____ is greater than _____.
- ▶ Breaks ROE down into:
 - Profitability
 - Asset Use Efficiency
 - Financial Leverage

Uses of Financial Statements

- ▶ Ratio Analysis
- ▶ Common Size Statements
- ▶ Trend Analysis
- ▶ Cross-sectional Analysis
- ▶ The DuPont Identity

Limitations of Financial Statements

- ▶ Benchmarking
- ▶ Effects of Inflation
- ▶ Seasonal Factors
- ▶ “Window Dressing”
- ▶ Differing Operating and Accounting Practices
- ▶ The Big Picture

Chapter 3 Suggested Problems

- ▶ Concepts Review and Critical Thinking Questions:
 - 2, 5, and 7
- ▶ Questions and Problems:
 - 7, 12, 17, 22, 26, and 27

THE TIME VALUE OF MONEY

SOME FUTURE VALUE DEFINITIONS

- Future Value (FV): The amount an investment is worth after one or more periods.

- Simple Interest: Interest earned only on the original principal amount invested.

MORE FUTURE VALUE DEFINITIONS

- ◉ Compound Interest: Interest earned on both the initial principal and the interest reinvested from prior periods.
- ◉ Compounding: The process of accumulating interest on an investment over time to earn more interest.

CALCULATING FUTURE VALUE

- ◉ Future Value:

$$FV_t = PV_0 \times (1 + r)^t$$

- ◉ Future Value Factor: $(1 + r)^t$

FUTURE VALUE: EXAMPLE #1

- You deposit \$500 into a savings account. You plan on withdrawing the money and closing the account exactly two years from today. Interest rates are 10%, compounded annually, and will remain constant over the two years.

FUTURE VALUE: EXAMPLE #1

- How much money will you have when you close the account (future value)?
- How much simple interest did you accumulate?
- How much compound interest did you accumulate?

THE EFFECTS OF COMPOUNDING

- ◉ The effects/benefits of compounding:
 - Increase with the interest rate.
 - Increase with time.
 - Increase with the frequency of compounding.
(more on the details of this later.)

FUTURE VALUE: EXAMPLE #2

- ◉ You are scheduled to receive \$17,000 in two years. When you receive it, you will invest it for six more years at 6 percent per year. How much will you have in eight years?

FUTURE VALUE: EXAMPLE #3

- You are trying to save to buy a new \$60,000 car. You have \$22,000 today that can be invested at your bank. The bank pays 4 percent annual interest on its accounts. How long will it be before you have enough to buy the car?

FUTURE VALUE: EXAMPLE #4

- Assume you are only willing to wait 15 years in the previous example. What rate of return would you need to earn?

SOME PRESENT VALUE DEFINITIONS

- ◉ Present Value (PV): The current value of future cash flows discounted at the appropriate discount rate.
- ◉ Discount: Calculate the present value of some future amount.
- ◉ Discount Rate: The rate used to calculate the present value of future cash flows.

CALCULATING PRESENT VALUE

- ◉ Present Value:

$$PV_0 = \frac{FV_t}{(1 + r)^t} = FV_t * \frac{1}{(1 + r)^t}$$

- ◉ Present Value Factor: $\frac{1}{(1 + r)^t}$

PRESENT VALUE: EXAMPLE #1

- ◉ You have five of the six Florida Lottery numbers. Lottery officials offer you the choice of the following alternative payouts:
 - Alternative 1: \$100,000 one year from now.
 - Alternative 2: \$200,000 five years from now.

PRESENT VALUE: STILL EXAMPLE #1

- ◉ Which alternative would you choose if interest rates are 12%?

PRESENT VALUE: STILL EXAMPLE #1

- ◉ What rate makes the two alternatives equally attractive?

PRESENT VALUE: EXAMPLE #2

- ◉ You have just received notification that you have won the \$1 million first prize in the Centennial Lottery. However, the prize will be awarded on your 100th birthday (assuming you are around to collect), 80 years from now. What is the present value of your windfall if the appropriate discount rate is 15%?

PRESENT VALUE: EXAMPLE #3

- Suppose you are still committed to owning a \$60,000 car. If you believe your mutual fund can achieve a 9 percent annual rate of return and you want to buy the car in 10 years, how much must you invest today?

TIPS ON SOLVING PRESENT VALUE AND FUTURE VALUE PROBLEMS

- $FV_t = PV_0 \times (1 + r)^t$
- $PV_0 = FV_t / (1 + r)^t$
- For multiple cash flows, just add up the individual present (or future) values.

TIPS ON SOLVING PRESENT VALUE AND FUTURE VALUE PROBLEMS

- ◉ As $t \uparrow$, $PV \downarrow$ and $FV \uparrow$
- ◉ As $r \uparrow$, $PV \downarrow$ and $FV \uparrow$
- ◉ There are (currently) only 4 components: PV , FV , t , and r
 - With ANY 3 components, you can solve for the 4th

CHAPTER 5 SUGGESTED PROBLEMS

- ◉ Concepts Review and Critical Thinking Questions:
 - 1, 2, 3, and 4
- ◉ Questions and Problems:
 - 1, 2, 3, 6, 9, 13, 14, 15, 16, 18, and 20

ADDITIONAL PRACTICE

Present Value	Years	Interest Rate	Future Value
\$40,000	7	5%	
	13	9%	\$18,395
\$15,000		15%	\$245,498
\$25,000	9		\$50,000

ADDITIONAL PRACTICE

- ◉ You are offered an investment that requires you to put up \$13,000 today in exchange for \$40,000 twelve years from now. What is the average annual rate of return on this investment?

ADDITIONAL PRACTICE

- Would you accept it if the appropriate discount rate was 8%?

ADDITIONAL PRACTICE

- You have the opportunity to make an investment that costs \$900,000. If you make this investment now, you will receive \$120,000 one year from today, \$250,000 and \$800,000 two and three years from today, respectively. The appropriate discount rate for this investment is 12%.

ADDITIONAL PRACTICE (CONTINUED)

- ◉ Should you make the investment? What is the net present value?

ADDITIONAL PRACTICE (CONTINUED)

- ◉ If the discount rate is 10%, should you invest?

CALCULATOR TIPS

- ◉ Make sure you set the number of payments per year to 1.
- ◉ Clear when necessary.
- ◉ Either PV or FV must be negative.
- ◉ Enter the interest rate as a whole number.

FINC 3610: Principles of Business Finance

Time Value of Money Practice Problems

1. You are looking to purchase a home automation system when you graduate in two years. You plan to deposit the money in an investment account earning 8 percent annually. The anticipated cost of the system in two years is \$2,500. How much must you deposit today?
2. When you were born 21 years ago, your Aunt Burtha put \$2,000 into a saving account for you. The account has earned an average annual return of 4 percent per year, and nothing else has been deposited or withdrawn from the account. How much is there today?
3. Aunt Burtha also put \$2,000 into a different savings account for your brother when he was born 18 years ago. If his account has \$4,813.24 in it today, what rate of return did his account earn?
4. You decide to borrow money from Cousin Vinnie and he has agreed to a 20 percent interest rate per year. If you borrowed \$200 last year, and know you have to pay him in full exactly \$716.64 (and make no other payments to him), how long from now until you must pay him back?
5. Five years ago, you bought a piece of art at auction for \$1.2 million. Yesterday, you sold that piece at auction for \$2,630,937.64. You also purchased a new piece yesterday for \$300,000. If the piece you just bought earns the same rate of return as the first one, how much will you be able to sell it for in 8 years?
6. You plan to save for a Caribbean cruise. You deposit \$500 today, \$250 in two years, and \$1,000 in three years. If your investment account earns 9 percent per year, how much will you have in five years?
7. Which do you prefer: (1) receiving \$1,000 in five years when the interest rate is 3 percent per quarter or (2) receiving \$1,500 in six years when the interest rate is 6 percent every six months?
8. You have won a lawsuit and the court has arranged for the defendant to pay you \$7,500 per year for the next three years. If the appropriate discount rate is 8 percent, what is the value of your settlement today?
9. Last year, you borrowed money from Cousin Vinnie and he agreed to a 25 percent interest rate per year. If you borrowed \$250, and know you have to pay him in full exactly \$488.28 (and make no other payments to him), what will be the total length of the loan?
10. An investment offers a return of 1 percent every month if you deposit a minimum of \$20,000. If you make the minimum deposit today and do not make any additional deposits, how much will you have in your account in 20 years?

Review for Exam #1

Exam #1

- *Don't Forget:*
 - Scan Sheet
 - Calculator
 - Pencil
 - Picture ID
 - Cheat Sheet

Things To Do...

- Study both the notes and the book.
- Remember the Panopto Recordings in Canvas.
- Do suggested problems.
- Do more problems!
- Be comfortable with calculator, but understand concepts (e.g., timeline).
- Get help if you are having problems.

HELP!

○ Office Hours

- _____
- _____

or by appointment

Things NOT To Do...

- Study solutions and not do problems.
- Memorize all the formulas.
- Miss the exam.
- Forget your calculator.
- Cheat.
- Think bad thoughts about me between now and the exam.

Conceptual Exercise

Which of the following is a great reason to take Yost's 3610 class?

- I. It is the easiest class in the College.
 - II. He's the best looking professor at AU.
 - III. His outstanding use of colors and diagrams cannot be duplicated.
- A) I only
B) I and II
C) I and III
D) II and III
E) I, II, and III

Warning

The following may not contain everything we covered, and therefore, may not contain all testable material.

Introduction to Corporate Finance

- Chapter 1
- What is corporate finance? What are the three functions?
- What is the goal of the firm?
- What are the benefits/drawbacks of sole proprietorships, general and limited partnerships, and corporations?
- What are agency costs and how do we mitigate them?

Financial Statements and Cash Flow

- Chapter 2 and section 3.1 of Chapter 3
- Balance Sheet
 - Book Values versus Market Values
- Income Statement
 - Accounting Numbers versus Cash Flows
- Statement of Cash Flows
 - Sources and Uses of Cash
- Taxes
 - Average versus Marginal

Financial Statement Analysis

- Chapter 3
- Ratios
 - How to calculate them.
 - What they tell us.
 - DuPont Identity
- Common size balance sheets and income statements
- Potential Problems for Ratio Analysis

The Time Value of Money

- Chapter 5
- Present and Future Values of Single Cash Flows
(and multiple cash flows by adding them up)
- Calculate N, I/Y, PV, and FV.
- *Cannot compare cash flows across periods.*
- *Moving along time line.*
- *Understand concepts.*

Practice Problem #1

Which of the following actions are likely to reduce the agency problem between stockholders and managers?

- a. Congress passes a law that severely restricts hostile takeovers.
- b. A manager receives a lower salary but receives additional shares of the company's stock.
- c. The board of directors has become more vigilant in its oversight of the company's management.
- d. Statements b and c are correct.
- e. All of the statements above are correct.

Practice Problem #2

Information on the Statement of Cash Flows comes from...

- a. The Income Statement.
- b. The Balance Sheet.
- c. Both the Income Statement and the Balance Sheet.
- d. Market values not found on the Income Statement or Balance Sheet.
- e. Both c and d.

Practice Problem #3

Which of the following statements is most correct?

- a. Many large firms operate different divisions in different industries, and this makes it hard to develop a meaningful set of industry benchmarks for these types of firms.
- b. Financial ratios should be interpreted with caution because there exist seasonal and accounting differences that can reduce their comparability.
- c. Financial ratios should be interpreted with caution because it may be difficult to say with certainty what is a “good” value. For example, in the case of the current ratio, a “good” value is neither high nor low.
- d. Ratio analysis facilitates comparisons by standardizing numbers.
- e. All of the statements above are correct.

Practice Problem #4

Other things equal, present value...

- a. Increases as the number of periods increases.
- b. Increases as the rate of interest increases.
- c. Increases as the future value increases.
- d. Decreases as the rate of interest decreases.
- e. None of the above.

Practice Problem #5

The goal of the company is generally presumed to be...

- a. Sales maximization.
- b. Profit maximization.
- c. Shareholder wealth maximization.
- d. Cost minimization.
- e. Profit stabilization.

Practice Problem #6

On the Statement of Cash Flows, depreciation will be found in the section entitled...

- a. Cash Flow from Operating Activities.
- b. Cash Flow from Investing Activities.
- c. Cash Flow from Financing Activities.
- d. Cash Flow from Non-cash Adjustments.
- e. None of the above.

Practice Problem #7

Which of the following statements is most correct?

- a. A firm with financial leverage has a larger equity multiplier than an otherwise identical firm with no debt in its capital structure.
- b. The use of debt in a company's capital structure results in tax benefits to the investors who purchase the company's bonds.
- c. All else equal, a firm with a higher debt ratio will have a lower return on equity.
- d. All of the answers above are correct.
- e. Answers a and c are correct.

Practice Problem #8

Your dentist mentions that if you earn 15% for two years, you will have more money than if you earn 10% for one year and 20% for the other year. What do you think about your dentist's statement?

- a. The dentist is correct.
- b. The dentist is incorrect. Both sets of returns result in the same value.
- c. The dentist is incorrect. You will actually have more money if you earn 20% in the first year and 10% in the second year.
- d. The dentist is incorrect. You will actually have more money if you earn 10% in the first year and 20% in the second year.
- e. The dentist is incorrect. You will have more money if you earn 10% in one year and 20% in the other year, and it makes no difference what order the two returns occur in.

Practice Problem #9

Which of the following is not a significant advantage of the corporate form of organization over the partnership or proprietorship forms?

- a. Limited liability
- b. Double taxation
- c. Ease of transferring ownership
- d. Unlimited life
- e. Ability to raise funds

Practice Problem #10

The current Federal income tax system gives corporate financial managers the incentive to use _____ financial leverage and to _____ a higher proportion of corporate earnings.

- a. more; retain
- b. more; pay out
- c. less; retain
- d. less; pay out
- e. None of the above

Practice Problem #11

You observe that a firm's profit margin is below the industry average, its debt ratio is below the industry average, and its return on equity exceeds the industry average. What can you conclude?

- a. Inventory turnover is above the industry average.
- b. Total assets turnover is above the industry average.
- c. Total assets turnover is below the industry average.
- d. Both statements a and b are correct.
- e. None of the statements above is correct.

Practice Problem #12

Compute the present value of \$1,910 received after three years if the appropriate discount rate is 6.3%.

- a. \$1,431
- b. \$1,272
- c. \$1,590
- d. \$1,113
- e. Not enough information.

Answers

- | | | | |
|----|---|-----|---|
| 1. | D | 7. | A |
| 2. | C | 8. | A |
| 3. | E | 9. | B |
| 4. | C | 10. | A |
| 5. | C | 11. | B |
| 6. | A | 12. | C |

Discounted Cash Flow Valuation

Future Value of Multiple Cash Flows

$$FV_t = CF_0 \times (1 + r)^t + CF_1 \times (1 + r)^{t-1} + \dots + CF_t$$

- You open a bank account today with \$500. You expect to deposit \$1,000 at the end of each of the next three years. Interest rates are 5%, compounded annually. How much will you have in your account in three years?

You open a bank account today with \$500. You expect to deposit \$1,000 at the end of each of the next three years. Interest rates are 5%, compounded annually. How much will you have in your account in three years?

Present Value of Multiple Cash Flows

$$PV_0 = CF_0 + \frac{CF_1}{(1+r)^1} + \frac{CF_2}{(1+r)^2} + \dots + \frac{CF_t}{(1+r)^t}$$

- You just inherited some money from now dead Uncle Fred. You plan to use the money for a vacation, but know you first need to put aside some to cover your books and supplies over the next two years. You expect to need \$4,000 in each of the next two years. Interest rates are 10%, compounded annually. How much of now dead Uncle Fred's money do you need to put aside today?

You just inherited some money from now dead Uncle Fred. You plan to use the money for a vacation, but know you first need to put aside some to cover your books and supplies over the next two years. You expect to need \$4,000 in each of the next two years. Interest rates are 10%, compounded annually. How much of now dead Uncle Fred's money do you need to put aside today?

Valuing Perpetuities

- Perpetuity: A level stream of cash flows which continue forever (sometimes called consols).
- Present Value of a Perpetuity:

Valuing Perpetuities

- Assuming that interest rates are 10%, what is the value today of a perpetuity paying \$500 per year, with the first payment one year from today?

Valuing Perpetuities

- Would you be willing to pay \$6,500 for the same perpetuity if interest rates were 8%?

Growing Perpetuities

- Present Value of a Growing Perpetuity:

Growing Perpetuities

- Suppose you own a perpetuity that promises to pay \$1 next year, after which the payment is expected to grow at 5% per year forever. If interest rates are 10%, what is the value of the perpetuity?

Growing Perpetuities

- Assume a growing perpetuity just made a payment of \$120 yesterday. If the cash flow is expected to grow at 5% and interest rates are still 10%, what is the price of the perpetuity today?

Present Value of an Annuity

- Annuity: A level stream of cash flows for a fixed period of time.
- Present Value of an Annuity:

$$PV_0 = \frac{CF_1}{r} \times \left[1 - \frac{1}{(1 + r)^t} \right]$$

Present Value of an Annuity

- We can rearrange the equation to the following:
- Present Value of an Annuity:

$$PV_0 = CF_1 \times \frac{\left[1 - \frac{1}{(1 + r)^t} \right]}{r}$$

Present Value of an Annuity

Let's return to our earlier example:

- You just inherited some money from now dead Uncle Fred. You plan to use the money for a vacation, but know you first need to put aside some to cover your books and supplies over the next two years. You expect to need \$4,000 in each of the next two years. Interest rates are 10%. How much of now dead Uncle Fred's money do you need to put aside today?

Future Value of an Annuity

- Future Value of an Annuity:

$$FV_t = \frac{CF}{r} \times [(1 + r)^t - 1]$$

- This, of course, can also be rearranged...

$$FV_t = CF \times \frac{[(1 + r)^t - 1]}{r}$$

Future Value of an Annuity

- What is the future value (at year 2) of the previous example?

Annuities: A Real-Life Example

- Books and beer are expensive! You now have a balance of \$2,000 on your VISA card. The interest rate on that card is 2% per month. However, in an attempt to not let your debt stifle your social life, you pay only the \$50 minimum payment each month (starting next month) and make no more charges on that card. How long will it take you to pay off the balance?

Annuities: A Real-Life Example

- How much would you have to pay each month if you wanted to pay off the balance in 3 years?

Growing Annuities

- Present Value of a Growing Annuity:

$$PV_0 = \frac{CF_1}{r - g} \times \left[1 - \left(\frac{1 + g}{1 + r} \right)^t \right]$$

Annuities Due

- Annuity Due: An annuity for which the cash flows occur at the _____ of the period.

Annuities Due

- Annuity Due: An annuity for which the cash flows occur at the *beginning* of the period.
- PV Annuity Due
$$= (\text{PV Ordinary Annuity}) \times (1 + r)$$

The Effect of Compounding

- Annual Percentage Rate (APR): The nominal, stated annual interest rate that ignores the effect of compound interest within the year. The APR is the periodic rate (r) times the number of compoundings per year (m).

Annual Percentage Rate (APR): The nominal, stated annual interest rate that ignores the effect of compound interest within the year. The APR is the periodic rate (r) times the number of compoundings per year (m).

12% APR compounded quarterly

Annual Percentage Rate (APR): The nominal, stated annual interest rate that ignores the effect of compound interest within the year. The APR is the periodic rate (r) times the number of compoundings per year (m).

12% APR compounded monthly =

12% APR compounded quarterly =

12% APR compounded semiannually =

12% APR compounded annually =

The Effect of Compounding

- Effective Annual Rate (EAR): The effective annual interest rate, which takes into account the effect of compound interest.

APR and EAR

- Example: A bank loan is quoted as 10% APR, compounded semiannually. What is the EAR?

APR and EAR

- Example: A bank loan is quoted as 10% APR, compounded semiannually. What is the EAR?

$$EAR = \left[1 + \left(\frac{APR}{m} \right) \right]^m - 1$$

APR and EAR: An Example

- Which loan would you choose?
 - Bank A: 15% compounded daily
 - Bank B: 15.5% compounded quarterly
 - Bank C: 16% compounded annually

Amortization

- What is an amortized loan?
- You plan to buy a \$200,000 house. You will put 10% down and finance the rest with a 30 year mortgage at 6% APR, compounded monthly. What are the monthly payments?

Amortization Schedule

Month	Beg. Bal	PMT	Interest	Principal	End. Bal.
1					
2					
3					
4					
357	4,263.34	1,079.19	21.32	1,057.87	3,205.46
358	3,205.46	1,079.19	16.03	1,063.16	2,142.30
359	2,142.30	1,079.19	10.71	1,068.48	1,073.82
360	1,073.82	1,079.19	5.37	1,073.82	0.00

Chapter 6 Suggested Problems

- Concepts Review and Critical Thinking Questions:
 - 2 through 8
- Questions and Problems:
 - 1, 3, 4, 5, 7, 10, 12, 20, 21, 24, 26, 28, 36, 41, 43, 45, and 54

Additional Practice

- You want to buy a new, fully-loaded truck. You have managed to talk the salesman down to \$40,000. You plan on putting a 10% down payment on it and have secured a 60 month loan at 9% APR, compounded monthly, for the balance. How much are your monthly payments?

Additional Practice

- Assuming a 10% interest rate, compounded annually, what is the value today of \$1,000 per year forever, with the first payment starting one year from today?

Additional Practice

- What if the first payment was in 5 years?

Additional Practice

- Given an interest rate of 10% APR, compounded annually, what is the value in five years of a perpetual stream of \$120 annual payments starting in nine years?

Additional Practice

- You have just read an advertisement that says, “Pay us \$100 a year for 10 years, starting next year, and we will pay you (and your heirs) \$100 a year thereafter in perpetuity.” At what range of interest rates would you accept this deal?

Everything You Wanted to Know About Bonds and Their Value

What are bonds?

- Yost Rocks, Inc. wants to borrow money, and it decides to issue bonds. Each bondholder lends the firm money today for 30 years at 12 percent interest. Yost Rocks pays each bondholder \$120 per year and returns the principal (\$1,000) back to the bondholder at the end of the 30 years.

Bond Terms

- Coupon: The stated interest payment made on a bond.
- Face Value: The principal amount of a bond that is repaid at the end of the term. Also called _____.
- Coupon Rate: The _____ coupon divided by the face value of a bond.

More Bond Terms

- Maturity: Specific date on which the principal amount of a bond (i.e., the face value) is repaid.
- Yield to Maturity (YTM): The rate required in the **market** on the bond. Also called the yield. This will be the “r” we use to calculate price and is quoted as _____. This is often not the same as the coupon rate.

Calculating the Price of a Bond

- How do we calculate the price of a bond?
- The price of a bond is equal to the _____ of the bond's
_____.

Pricing Coupon Bonds

- Tigers, Inc. decides to issue \$1,000 bonds with 5 years to maturity. The coupon rate is 10 percent, paid annually. The yield to maturity is also 10%. What is the price of a Tigers, Inc. bond?

Pricing Coupon Bonds



Pricing Coupon Bonds

- Now, assume the yield to maturity (i.e., the market interest rates) rises to 12 percent. What is the price of the bond now?

Pricing Coupon Bonds



Pricing Coupon Bonds

- Now, assume the yield to maturity (i.e., the market interest rates) falls to 8 percent. What is the price of the bond now?

Pricing Coupon Bonds



Pricing Coupon Bonds

- Assume the yield to maturity is 10 percent. What is the price of the bond if the coupon payments were made semiannually?

Pricing Coupon Bonds



Calculating YTM

- You just purchased a DocYost, Inc. bond for \$1,050. The bond has a \$1,000 face value and an 8% coupon rate, paid semiannually. The bond matures in $10 \frac{1}{2}$ years. What is its yield to maturity?

Current Yield

- Current Yield: _____ coupon divided by current price.
- What it is:
- What it is not:

Another Example

- There are two \$1,000 bonds identical in every way (i.e., same risk) except for their coupons and their prices. Both have 3 years to maturity and annual coupons. The first has an 8 percent coupon rate and sells for \$974.69. What is its yield to maturity (YTM)?
- The second bond has a 10 percent coupon rate. If it has the same YTM as the first bond, what is its price?
- Which is better?

What about zero-coupon bonds?

- What are they?
- How do I calculate their price?
- What is the price of a zero-coupon bond that has a face value of \$1,000 and matures in 10 years, if the YTM is 8%? Assume semiannual compounding.

Interest Rate Risk

- *Interest Rate Risk*: The risk of a change in the value of a bond because of a change in the interest rate.
 1. Bond prices and market interest rates move in _____ directions.
 2. All other things being equal, the longer the time to maturity, the _____ the interest rate risk.
 3. All other things being equal, the lower the coupon rate, the _____ the interest rate risk.

Other Bond Pricing Truths

- When a bond's coupon rate is _____ than the YTM (market's required return), the bond's price (market value) will be greater than its par value.
- When a bond's coupon rate is _____ the YTM (market's required return), the bond's price (market value) will be equal to its par value.
- When a bond's coupon rate is _____ than the YTM (market's required return), the bond's price (market value) will be less than its par value.

The Term Structure of Interest Rates

- Term Structure: The relationship between interest rates and time-to-maturity of a debt security.

The Term Structure of Interest Rates

- Term Structure: The relationship between interest rates and time-to-maturity of a debt security.
- Yield on Bonds
 - Real Interest Rate
 - Inflation Premium
 - Interest Rate Risk Premium
 - Default Risk Premium
 - Liquidity/Marketability Premium

Bond Features

- Indenture: The written agreement between the corporation and the lender detailing the terms of the debt issue.
- Terms of a Bond
- Security

Bond Features

- Seniority
 - Repayment
 - Sinking Fund
 - Call Provision
 - Call Premium
 - Yield-to-Call
 - Protective Covenants

Bond Ratings

Note: At times, both Moody's and S&P use adjustments (called notches) to these ratings. S&P uses plus and minus signs: A+ is the strongest A rating and A- the weakest. Moody's uses a 1, 2, or 3 designation, with 1 being the highest.

Corporate Bond Reporting

FIGURE 7.3 Sample TRACE Bond Quotations
Most Active Investment Grade Bonds

<http://finra-markets.morningstar.com/BondCenter/>

Issuer Name	Symbol	Coupon	Maturity	Moody's/S&P/Fitch	High	Low	Last	Change	Yield%
GENERAL ELEC CAP CORP MEDIUM TERM NTS BO	GE3814218	2.450%	03/15/2017	A1/AA+/	103.72800	103.52300	103.72700	103.72700	1.185204
SAFEWAY INC	SWY.HE	6.350%	08/15/2017	Baa3/BBB/BBB-	116.25000	111.81300	115.50000	4.232000	1.674056
SAFEWAY INC	SWY.HH	3.950%	08/15/2020	Baa3/BBB/BBB-	103.91000	97.69000	101.75000	1.250000	3.641660
SAFEWAY INC	SWY.GN	7.250%	02/01/2031	Baa3/BBB/BBB-	97.50000	92.00000	94.37500	-2.125000	7.855853
SAFEWAY INC	SWY.AB	4.750%	12/01/2021	Baa3/BBB/BBB-	103.99500	100.00000	102.20400	1.204000	4.409059
BP CAP MKTS P L C	BP.JH	3.875%	03/10/2015	A2//A	103.63600	103.23800	103.63600	0.120000	0.212859
COOPERATIEVE CENTRALE RAIFFEISEN BOERENL	RABO4076456	5.750%	12/01/2043	A2//A+	107.15000	105.50900	106.48500	-0.187000	5.312953
APPLE INC	AAPL4001810	3.850%	05/04/2043	Aa1/AA+/	87.23470	85.10100	85.33800	-0.406000	4.788015
MAY DEPT STORES CO	M.BG	5.750%	07/15/2014	Baa2/BBB+/BBB	101.81470	101.80100	101.81470	-0.029300	0.427045
COMCAST CORP NEW	CMCS.HA	6.950%	08/15/2037	A3/A-/A-	128.32900	127.36600	127.36600	-0.948000	4.961015

Government Bond Reporting

FIGURE 7.4

Sample *Wall Street Journal* U.S. Treasury Note and Bond Prices

SOURCE: Table recreated with data from wsj.com March 7, 2014.

<http://www.wsj.com>

Treasury Notes and Bonds					
Maturity	Coupon	Bid	Asked	Chg	Asked Yield
8/31/2017	1.875	102.8828	102.9141	-0.1563	1.019
5/15/2018	3.875	110.3125	110.3750	-0.3125	1.317
2/28/2019	1.375	98.6953	98.7109	-0.3516	1.646
2/29/2020	1.250	95.7734	95.8203	-0.3750	1.996
8/15/2021	8.125	140.1328	140.1797	-0.5234	2.231
11/15/2022	1.625	92.1563	92.2031	-0.4063	2.635
8/15/2023	2.500	98.0703	98.1328	-0.4453	2.726
2/15/2024	2.750	99.6094	99.6719	-0.4844	2.788
2/15/2026	6.000	130.2813	130.3594	-0.6875	2.962
8/15/2026	6.750	138.7500	138.8281	-0.7266	2.989
2/15/2027	6.625	137.9219	138.0000	-0.7422	3.048
8/15/2027	6.375	135.6875	135.7656	-0.7422	3.100
8/15/2028	5.500	126.2891	126.3672	-0.7422	3.204
11/15/2028	5.250	123.3828	123.4609	-0.7031	3.230
2/15/2029	5.250	123.3594	123.4375	-0.7031	3.256
8/15/2029	6.125	134.5156	134.5938	-0.7500	3.256
5/15/2030	6.250	136.8359	136.9141	-0.7813	3.289
2/15/2031	5.375	125.8984	125.9766	-0.7266	3.352

Differences Between Debt and Equity

■ Debt

- Not an ownership interest
- Creditors do not have voting rights
- Interest is considered a cost of doing business and is tax deductible
- Creditors have legal recourse if interest or principal payments are missed
- Excess debt can lead to financial distress and bankruptcy

■ Equity

- Ownership interest
- Common stockholders vote for the board of directors and other issues
- Dividends are not considered a cost of doing business and are not tax deductible
- Dividends are not a liability of the firm and stockholders have no legal recourse if dividends are not paid
- An all equity firm can not go bankrupt

Chapter 7 Suggested Problems

■ Concepts Review and Critical Thinking Questions:

- 1, 3, 6, and 8

■ Questions and Problems:

- 2, 3, 4, 5, 6, 18, 20, 21 (effective annual yield is the EAR), 22, 26, 29 (only parts A and B), and 32.

Example #1

- I just purchased a \$1,000 zero-coupon bond that matures in 8 years. If the yield-to-maturity is 6.5%, how much did I pay?

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Example #2

- You are considering purchasing a \$1,000 Alpha Corp. bond at par. The bond has a 10% coupon rate, paid semiannually, and matures in 4 years. What is its YTM?

Example #3

- Beta Enterprises is issuing 10 year bonds with a face value of \$1,000. The coupon rate is 10%, paid semiannually. What is the price of the bond if the YTM is 8%?

Example #4

- Gamma Corporation bonds are selling for \$1,386.09. They have a face value of \$1,000 and a current yield of 7.2145%. If the YTM is 5%, interest is paid annually, and the bond has 10 years to maturity, what is the coupon rate?

Everything You Wanted to Know About Stocks and Their Value

17
2

Let's Review...

- The price (value) of a bond is equal to the _____ of the bond's _____ cash flows.

Stock Valuation

- The price (value) of a share of stock is equal to the _____ of the stock's _____ cash flows.

Stock Valuation

- Common Stock Cash Flows:

- 1)
- 2)

$$P_o = \frac{D_1}{(1+r)^1} + \frac{D_2}{(1+r)^2} + \frac{D_3}{(1+r)^3} + \dots + \frac{D_{n-1}}{(1+r)^{n-1}} + \frac{D_n + P_n}{(1+r)^n}$$

Example

- ◉ Kidd Inc. stock will pay a dividend in one year of \$1 and a dividend in two years of \$1.50. You plan to sell the stock in two years (just after you receive the dividend) for \$27.65. If the market's required return on Kidd Inc. stock is 10%, what is the price today?

Stock Valuation

- ◉ 3 Types of Dividends:
 - No Growth or Zero Growth
 - Constant Growth
 - Non-constant Growth

Zero Growth

- Dividends do not increase in dollar amount.
- $D_1 = D_2 = D_3 = D_4 = D$
- Dividends are paid every period forever.
- The price of a share of a zero growth stock is:

Zero Growth Example

- Yostmeister, Inc. just paid a dividend of \$10 per share. The company expects to pay the same dividend every year forever. What is the price of a share of Yostmeister stock if the market's required return on this stock is 10 percent?

Constant Growth

- Dividends increase at a fixed rate (g) each period.
- $D_1 = D_0 \times (1 + g)$
- $D_2 = D_1 \times (1 + g) = D_0 \times (1 + g)^2$
- $D_3 = D_2 \times (1 + g) = D_0 \times (1 + g)^3$
- Dividends are paid every period forever.
- The price of a share of a constant growth stock is:

Constant Growth Example

- Tigers, Inc.'s dividends per share are expected to grow indefinitely by 5 percent per year. If next year's dividend is \$10 and the market's required return on this stock is 8 percent, what is the current stock price?

Non-constant Growth

- Dividends have supernormal growth for some period of time, then "slow down" and grow steadily thereafter.
or
- Dividends grow erratically for a period of time, then grow steadily thereafter.
- How do I price a non-constant growth stock?

Yost's 3 Steps

- 1.
- 2.
- 3.

Non-constant Growth Example

- Infinite Technology just paid a dividend of \$1.82. The market's required return on this stock is 16 percent. If the company expects the dividend to grow at 30 percent per year for the next three years and 10 percent per year thereafter, what is the current price of the stock?

The Required Rate of Return

- Recall the dividend growth model:
- A little algebra...

The Required Rate of Return

- Dividend Yield: The dividend income portion of a stock's return.
- Capital Gains Yield: The price change portion of a stock's return.
- Let's look at the Tigers, Inc. example (constant growth example):

Constant Growth Example

- Tigers, Inc.'s dividends per share are expected to grow indefinitely by 5 percent per year. If next year's dividend is \$10 and the market's required return on this stock is 8 percent, what is the current stock price?

The Dividend Growth Rate

- How might we estimate the dividend growth rate?

Market Multiples

- $P_t = \text{Benchmark PE Ratio} \times EPS_t$

Market Multiples

- Suppose the median PE ratio in an industry is 20. What is your estimate of the price per share of a company that has \$1.2 million in net income and 2 million shares outstanding?

Common Stock vs. Preferred Stock

○ Common Stock

- Voting Rights
 - Majority Voting or Straight Voting
 - Cumulative Voting
- Dividends
- Classes of Stock

Common Stock vs. Preferred Stock

○ Preferred Stock

- Voting Rights
- Dividends
 - Cumulative
 - Non-cumulative
- Stated/Liquidating Value



○ Preferred Stock and Debt

Differences Between Debt and Equity

○ Debt

- Not an ownership interest
- Creditors do not have voting rights
- Interest is considered a cost of doing business and is tax deductible
- Creditors have legal recourse if interest or principal payments are missed
- Excess debt can lead to financial distress and bankruptcy

○ Equity

- Ownership interest
- Common stockholders vote for the board of directors and other issues
- Dividends are not considered a cost of doing business and are not tax deductible
- Dividends are not a liability of the firm and stockholders have no legal recourse if dividends are not paid
- An all equity firm can not go bankrupt

Stock Markets

○ Primary vs. Secondary Markets

○ Dealers vs. Brokers

○ NYSE vs. NASDAQ

Looking Up Stock Prices

- Issue (Stock and Sym)
- Volume
- Price (Close)
- Chg (Net Chg)
- % Chg

finance.yahoo.com

Chapter 8 Suggested Problems

- Concepts Review and Critical Thinking Questions:
 - 5, 7, and 11
- Questions and Problems:
 - 1, 2, 3, 5, 8, 15, 17, 18, 19, 20, 21, 22, 24, 25, 31, and 32

Stock Valuation Example #1

- Griffin Corporation will pay a \$5.00 per share dividend next year. The company pledges to increase its dividend by 3 percent per year, indefinitely. If you require a 16 percent return on your investment, how much will you pay for the company's stock today?

Stock Valuation Example #2

- The next dividend payment by SAF, Inc., will be \$4 per share. The dividends are anticipated to maintain a 6 percent growth rate, forever. If SAF stock currently sells for \$45.00 per share, what is the required return?

Stock Valuation Example #3

- Suppose you know that a company's stock currently sells for \$60 per share and the required return on the stock is 18 percent. You also know that the total return on the stock is evenly divided between a capital gains yield and a dividend yield. If it's the company's policy to always maintain a constant growth rate in its dividends, what is the dividend per share that was just paid?

Stock Valuation Example #4

- Nematode, Inc., has an issue of preferred stock outstanding that pays a \$9.50 dividend every year, in perpetuity. If this issue currently sells for \$110 per share, what is the required return?

Stock Valuation Example #5

- Key Corporation, is a start-up tech. firm. No dividends will be paid on the stock over the next five years, because the firm needs the money for growth. The company will then pay a \$6 per share dividend and will increase the dividend by 5 percent per year thereafter. If the required return on this stock is 23 percent, what is the current share price?

Stock Valuation Example #6

- Taza Corporation is expected to pay the following dividends over the next four years: \$4.75, \$3, \$2, \$1. Afterwards, the company pledges to maintain a constant 9 percent growth rate in dividends, forever. If the required return on the stock is 17 percent, what is the current share price?

Stock Valuation Example #7

- Torsion Corporation stock currently sells for \$108 per share. The market requires a 15 percent return on the firm's stock. If the company maintains a constant 7 percent growth rate in dividends, what was the most recent dividend per share paid on the stock?

Review for Exam #2

Exam #2

► ***Don't Forget:***

- ▶ Scan Sheet
- ▶ Calculator
- ▶ Pencil
- ▶ Picture ID
- ▶ Cheat Sheet

Things To Do...

- ▶ Study both the notes and the book.
- ▶ Remember the Panopto Recordings in Canvas.
- ▶ Do suggested problems.
- ▶ Do more problems!
- ▶ Be comfortable with calculator, but understand concepts (e.g., timeline).
- ▶ Get help if you are having problems.

HELP!

▶ Office Hours

- ▶ _____
- ▶ _____

or by appointment

Things NOT To Do...

- ▶ Study solutions and not do problems.
- ▶ Memorize all the formulas.
- ▶ Miss the exam.
- ▶ Forget your calculator.
- ▶ Cheat.
- ▶ Think bad thoughts about me between now and the exam.

Warning

The following may not contain everything we covered, and therefore, may not contain all testable material.

Discounted Cash Flow Valuation

- ▶ *Chapter 6*
- ▶ PV and FV of Single and Multiple CFs
- ▶ Perpetuities and Growing Perpetuities
- ▶ Annuities and Annuities Due
- ▶ APR vs. EAR
 - ▶ What is the difference? Which do I use?
- ▶ Amortization Schedule

Bonds

- ▶ *Chapter 7*
- ▶ What are they?
- ▶ How do we price them?
 - ▶ Zero coupon and coupon bonds
 - ▶ Find price, YTM, time-to-maturity, coupon rate, current yield
- ▶ What are their characteristics?
- ▶ Interest Rate Risk
- ▶ Price Reporting

Stocks

- ▶ *Chapter 8*
- ▶ What are they?
- ▶ How do we price them?
 - ▶ 3 types + multiples
 - ▶ Find price, dividends, discount rate, growth rate
 - ▶ Calculating dividends (just paid or will pay next year)
- ▶ What are their characteristics?
 - ▶ Common versus preferred
- ▶ Stock Markets
- ▶ Price Reporting

Practice Problem #1

True or False:

- A. _____ Shareholders with smaller proportions of the firm's stock have a stronger voice when the firm practices straight (or majority) voting, rather than cumulative voting.
- B. _____ The seniority of a bond issue indicates whether those bondholders will get paid before or after preferred shareholders in the event of default.

Practice Problem #2

Which one of the following statements is TRUE?

- A. If a bond is trading at a premium, the current yield will always be greater than the coupon rate.
- B. A stock's required rate of return is equal to the capital gains yield minus the dividend yield.
- C. During periods of inflation and expected future inflation, the yield curve will be upward sloping.
- D. Both zero coupon bonds and common stock represent ownership in a corporation.
- E. A U.S. Treasury Bond will always have a higher expected yield to maturity than a corporate bond with the same time to maturity, face value, and coupon rate.

Practice Problem #3

If dividends on a common stock are expected to grow at a constant rate forever, and if you are told the most recent dividend paid, the dividend growth rate, and the appropriate discount rate today, you can calculate _____.

- I. the price of the stock today
 - II. the dividend that is expected to be paid ten years from now
 - III. the appropriate discount rate ten years from now
-
- A. I Only
 - B. II Only
 - C. Both I and II
 - D. I, II, and III
 - E. None of the Above

Practice Problem #4

A stream of payments is converted from an ordinary annuity to an annuity due. The annual payments are still the same size. As a result of this, the present value of the annuity will _____ and the future value of the annuity will _____.

- A. increase, increase
- B. increase, decrease
- C. decrease, increase
- D. decrease, decrease
- E. be unchanged, be unchanged

Practice Problem #5

Assume interest rates (and discount rates) have increased. As a result of this, the present value of an ordinary annuity will _____ and the future value of the annuity will _____.

- A. increase, increase
- B. increase, decrease
- C. decrease, increase
- D. decrease, decrease
- E. be unchanged, be unchanged

Practice Problem #6

TriCounty, Inc., just paid a \$2.50 dividend yesterday. Analysts anticipate dividends will grow at 16 percent for each of the next 3 years, followed by growth of 5 percent per year indefinitely. If analysts estimate the required rate of return on stocks of this risk is 12 percent, how much would you expect to pay today for a share of TriCounty, Inc.?

Practice Problem #7

Yost Corp. does not currently pay any dividends. However, the firm expects to begin paying dividends in 25 years with a \$5 payout per share, after which dividends will grow at 6 percent forever. If the market requires a 16 percent rate of return on stocks of this risk, what is the current stock price of Yost Corp.?

Practice Problem #8

Granny Mae has been helping her favorite grandchild save. She has given you \$1 each year on your birthday, starting when you turned one, and taken you to deposit it in your bank account, which earns 4 percent each year. You have not deposited or withdrawn any other money. You just turned 21. However, Granny Mae is forgetful, and she forgot to give you money on your 10th and 20th birthdays. How much is in your account today?

Practice Problem #8

Practice Problem #9

Your firm just issued \$1,000 par value bonds that mature in 30 years. The bonds pay semiannual coupons and have a coupon rate of 8.5 percent.

- A. If the yield to maturity is 8 percent, what is the current price of these bonds?

Practice Problem #9

- B. If the price of the bonds is \$948.25 right now, what is the yield to maturity?

Practice Problem #10

- ▶ You decide to go car shopping and have your eye on a very nice convertible on which you talk the salesman down to \$34,495. You decide to finance the entire price of the vehicle with a 60 month loan from the dealership at an 8 percent APR compounded monthly. How much interest do you pay in the sixth month?

Answers

- | | | | |
|----|----------------------|-----|---------------------------|
| 1. | A. False
B. False | 6. | \$49.71 |
| 2. | C | 7. | \$1.42 |
| 3. | I and II | 8. | \$29.39 |
| 4. | A | 9. | A. \$1,056.56
B. 9.00% |
| 5. | C | 10. | \$214.11 |

INVESTMENT CRITERIA

Net Present Value (NPV)

- What: NPV is a measure of how much value is created or added today by undertaking an investment (the difference between the investment's market value and its cost).
- How: Estimate future cash flows. Calculate the present value of those cash flows minus the initial cost.

NPV Example

- You plan to buy a machine that will cost \$2,000 today and produce cash flows of \$1,500 in each of the next two years. The salvage value will be zero. The cost of capital is 15 percent. Should you buy the machine?

Net Present Value (NPV)

- The Rule: An investment should be accepted if the net present value is _____ and rejected if it is _____.

*Assumes cash flows are reinvested at _____.

- Pros:

1. Uses _____
2. Adjusts for _____

- Cons:

1. Need appropriate _____
2. Relatively more difficult to _____

Internal Rate of Return (IRR)

- What: The internal rate of return is the discount rate that makes the net present value of a project equal to zero.
- How: Set NPV equal to zero and solve for “r”. Calculating IRR is identical to calculating the yield to maturity on bonds.

IRR Example

- You plan to buy a machine that will cost \$2,000 today and produce cash flows of \$1,500 in each of the next two years. The salvage value will be zero. The cost of capital is 15 percent. Should you buy the machine?

Internal Rate of Return (IRR)

- The Rule: An investment is acceptable if the IRR exceeds the _____. It should be rejected otherwise.
*Assumes cash flows are reinvested at _____.
- Pros:
 1. Closely related to _____
 2. Relatively easier to _____
- Cons:
 1. May result in _____
(nonconventional cash flows)
 2. May result in _____
(mutually exclusive investments)

Net Present Value Profile

- What is it?
- What information does it provide?
 - 1.
 - 2.
 - 3.
 - 4.

Internal Rate of Return (IRR)

- BEWARE – Nonconventional Cash flows
- Example: Assume you are considering a project with the following cash flows:

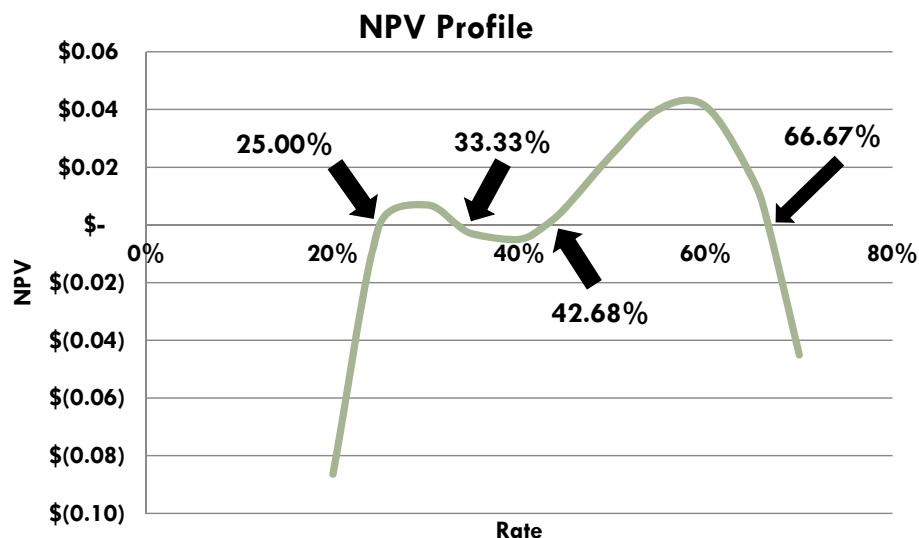
<u>Year</u>	<u>Cash Flows</u>
0	-\$ 252
1	\$1,431
2	-\$3,035
3	\$2,850
4	-\$1,000

Internal Rate of Return (IRR)

Calculate the NPV:

- at 25.00%: NPV = _____
- at 33.33%: NPV = _____
- at 42.86%: NPV = _____
- at 66.67%: NPV = _____

What's the IRR?



Internal Rate of Return (IRR)

- BEWARE – Mutually Exclusive Projects
- Example: Assume you are considering two mutually exclusive investments with the following cash flows:

<u>Year</u>	<u>Project A</u>	<u>Project B</u>
0	-\$350	-\$250
1	\$ 50	\$125
2	\$100	\$100
3	\$150	\$ 75
4	\$200	\$ 50

Internal Rate of Return (IRR)

- Which project should we choose based on the IRR?
- Should we always choose that project?
- What is the crossover rate?

The Crossover Rate

Modified Internal Rate of Return (MIRR)

- What: MIRR is a calculation of IRR on modified cash flows. For the combination approach, it is the discount rate that equates the present value of all cash outflows to the future value of all cash inflows.
- How: For the combination approach, discount all cash outflows to time 0 and compound all cash inflows to the end of the project. Then, calculate the discount rate that makes them equal.

MIRR Example

- You plan to buy a machine that will cost \$2,000 today and produce cash flows of \$1,500, -\$500, and \$1,200 in each of the next three years. The salvage value will be zero. The cost of capital is 15 percent. Should you buy the machine?

Modified Internal Rate of Return (MIRR)

- The Rule: An investment is acceptable if the MIRR exceeds the _____. It should be rejected otherwise.

*Assumes cash flows are reinvested at _____.

- Pros:

1. Closely related to _____
2. No longer possible to get _____

- Cons:

1. May result in _____
(mutually exclusive investments)

The Profitability Index (PI)

- What: The profitability index is the *present value* of an investment's future cash flows divided by its initial cost (absolute value). Also called a benefit-cost ratio.
- How: Calculate the present value of the future cash flows (the PV not the NPV) and divide by the initial cost. If a project has a positive (negative) NPV, the PI will be greater (less) than 1.

PI Example #1

- You plan to buy a machine that will cost \$2,000 today and produce cash flows of \$1,500 in each of the next two years. The salvage value will be zero. The cost of capital is 15 percent. What is its profitability index? Should you buy the machine?

PI Example #2

- You must choose between the two following mutually exclusive projects:
 - A: Cost is \$ 25 and PV is \$ 50.
 - B: Cost is \$100 and PV is \$150.
- Which one should you choose?

The Profitability Index (PI)

- The Rule: Only accept projects with a PI greater than _____, and invest in projects with the largest PI's first.
- Pros:
 1. Closely related to _____
 2. May be useful when investment funds are limited
- Cons:
 1. May result in _____
(mutually exclusive investments)

The Payback Rule

- What: The payback is the length of time it takes to recover our initial investment.
- How: Assume cash flows are received uniformly throughout the year. Calculate the number of years it will take for the future cash flows to match the initial cash outflow.

Payback Example

You plan to buy a machine that will cost \$2,000 today and produce the following cash flows: \$500 in year 1, \$750 in year 2, \$300 in year 3, \$1,000 in year 4, and \$5,000 in year 5. Our firm only accepts projects with a payback of 4 years or less. Should you purchase the machine?

The Payback Rule

- The Rule:** An investment is acceptable if its calculated payback period is _____ some pre-specified number of years.
- Pros:**
 1. Simple/Easy to do
 2. Biased toward _____
- Cons:**
 1. Ignores _____
 2. Ignores cash flows _____
 3. Requires an _____
 4. Biased against _____

The Discounted Payback Rule

- What: The discounted payback period is the length of time it takes for the sum of the discounted cash flows to equal the initial investment.
- How: Assume cash flows are received uniformly throughout the year. Calculate the number of years it will take for the present value of the future cash flows to match the initial cash outflow.

Discounted Payback Example

You plan to buy a machine that will cost \$2,000 today and produce the following cash flows: \$500 in year 1, \$750 in year 2, \$300 in year 3, \$1,000 in year 4, and \$5,000 in year 5. Our firm only accepts projects with a discounted payback of 4 years or less. The cost of capital is 20%. Should you purchase the machine?

The Discounted Payback Rule

- The Rule: An investment is acceptable if its discounted payback is _____ some pre-specified number of years.
- Pros:
 1. Adjusts for _____
*Does not accept _____ projects
 2. Biased toward _____
- Cons:
 1. Ignores cash flows _____
 2. Requires an _____
 3. Biased against _____

The Average Accounting Return (AAR)

- What: The average accounting return is the ratio of the average net income of the project to the average book value of the investment.
- How: Calculate the average net income and divide it by the average book value.

AAR Example

You plan to buy a machine that will cost \$18,000 today and produce the following *net income*: \$500 in year 1, \$750 in year 2, \$300 in year 3, \$1,000 in year 4, and \$5,000 in year 5. The machine is worthless at the end of its 5 year life. Our firm only accepts projects with an average accounting return greater than 15%. Should you purchase the machine?

The Average Accounting Return (AAR)

- **The Rule:** An investment is acceptable if its average accounting return is _____ some pre-specified benchmark.

- **Pros:**
 1. Simple/Easy to do

- **Cons:**
 1. Ignores the time value of money
 2. Requires an arbitrary benchmark
 3. Accounting numbers and book values

Chapter 9 Suggested Problems

- Concepts Review and Critical Thinking Questions:
 - 1, 2, 3, 4, 5, 6, 7, and 8
- Questions and Problems:
 - 2, 4, 9, 10, 11, 12, 13, 15, 17, 19 (just Method #3: The Combination Approach), and 21

Additional Practice

- You are considering a project that costs \$1,500 and has the following after-tax cash flows:

Year 1	\$400
Year 2	\$500
Year 3	\$650
Year 4	\$700
- The cost of capital for this project is 15 percent, and your firm only accepts projects with a payback period or discounted payback period of less than 3.5 years.

Additional Practice (continued)

- What is the payback period for this project? Would you accept the project according to this criterion?
- What is the discounted payback period for this project? Would you accept the project according to this criterion?
- What is the internal rate of return (IRR) for this project? Would you accept the project according to this criterion?

Additional Practice (continued)

- What is the modified internal rate of return (MIRR) for this project (using the combination approach)? Would you accept the project according to this criterion?
- What is the profitability index (PI) for this project? Would you accept the project according to this criterion?
- What is the net present value (NPV) for this project? Would you accept the project according to this criterion?

Capital Budgeting

Capital Budgeting

- What is capital budgeting?
- How do we compute the value of a bond?
- How do we compute the value of a share of stock?
- How do we compute the value of a project?

Relevant Incremental Cash Flows

- Sunk Costs?
- Opportunity Costs?
- Side Effects?
- Changes in Net Working Capital?
- Taxes?
- Financing Costs?

Project Cash Flows

Net Working Capital

- What is net working capital?
- Why include it?
- Is it a cash inflow or a cash outflow?

**Don't forget to recover net working capital at the end of the project.*

Net Working Capital

**Don't forget to recover net working capital at the end of the project.*

Salvage Value and Taxes

- How do we calculate the book value of an asset?
- What if we sell an asset for more than book value?

Salvage Value and Taxes

- In year 4, we sell a machine for \$1,000. The book value of the machine is \$800. The tax rate is 30%. What is the after-tax salvage value?

Salvage Value and Taxes

- What if we sell an asset for less than book value?
- In year 4, we sell a machine for \$1,000. The book value of the machine is \$1,200. The tax rate is 30%. What is the after-tax salvage value?

Salvage Value and Taxes

- What if we sell an asset for less than book value?
- In year 4, we sell a machine for \$1,000. The book value of the machine is \$1,200. The tax rate is 30%. What is the after-tax salvage value?
- What if we sell an asset for book value?

Depreciation

- Two different ways to calculate:
 - Straight-Line Depreciation
 - MACRS

Straight-Line Depreciation

- Annual depreciation expense =
$$\frac{(\text{purchase price} - \text{ending book value})}{\text{number of years}}$$
- You just bought a new machine for \$15,000, which can be depreciated to zero over 5 years. What is the annual depreciation expense if the firm uses straight-line depreciation?

MACRS Depreciation

- How is it different from straight-line?
- Always depreciate to zero.
- Assumes asset is purchased halfway through first year.
- Property class assigned. Then use tables.

MACRS Depreciation Table

Year	<u>3 year</u>	<u>5 year</u>	<u>7 year</u>
1	33.33%	20.00%	14.29%
2	44.45%	32.00%	24.49%
3	14.81%	19.20%	17.49%
4	7.41%	11.52%	12.49%
5		11.52%	8.93%
6		5.76%	8.92%
7			8.93%
8			4.46%

MACRS Depreciation: An Example

- You just bought a new machine for \$15,000, which is in the 5-year asset class. Create a MACRS depreciation schedule.

Example #1

You are considering the introduction of a new product, EasyBs, which will be on the market for 5 years. Last year, you spent \$20,000 on a market study to determine the appropriate price would be \$5 per unit. You expect sales to be 10,000 units in year 1 and grow by 2,000 units each year after. Costs are expected to be 20% of sales, and the firm's marginal tax rate is 40%. In addition, you must purchase a manufacturing machine for \$100,000, which is depreciated using MACRS (3-year class), and worthless at the end of the project. Due to an increase in inventories, net working capital is expected to increase by \$15,000. If the required return on this project is 12%, should you introduce EasyBs?

Company Valuation

- How do we do it?

- The main difference:

Risk Analysis

- Sensitivity Analysis
- Scenario Analysis
- Simulations

Chapter 10 Suggested Problems

- Concepts Review and Critical Thinking Questions:
 - 1, 2, 6, and 7
- Questions and Problems:
 - 1, 2, 6, 7, 8, 9, 10, 13, 14, 15, and 31 (use a spreadsheet for problem 31).

Example #2

Auburn Industries is evaluating the option of purchasing a fork-lift truck costing \$60,000. If purchased, the truck will replace 4 workers, each with an average annual salary of \$15,000. However, an experienced fork-lift operator will have to be hired at a salary of \$20,000 per year. Fuel and maintenance expense is expected to be \$10,000 per year. At the end of its 5-year life, the truck will have a market value of \$10,000. Auburn Industries uses straight-line depreciation and depreciates the asset to \$0, assigns a 10% required rate of return for this type of investment, and has a marginal tax rate of 40%. Should the fork-lift truck be purchased?

Example #3

A company is considering the acquisition of production equipment which will reduce both labor and materials costs. The cost is \$100,000 and it will be depreciated on a straight-line basis down to \$0. The useful life of the equipment is five years, and it will have a \$20,000 market value at the end of five years. Operating costs will be reduced by \$30,000 in the first year and the savings will increase by \$5,000 per year in years 2, 3, and 4. Due to increased maintenance costs, savings in year five will be \$10,000 less than the year four savings. The equipment will also reduce net working capital by \$5,000 throughout the life of the project. The firm's tax rate is 35 percent and the required return is 16 percent. Should the firm purchase this production equipment?

Example #4

You have been asked by the president of your company to evaluate the proposed acquisition of a new flux capacitor for the firm's R&D department. The equipment's basic price is \$70,000 and it would cost another \$15,000 to modify it for special use by your firm. The flux capacitor, which has a MACRS 3-year recovery period, would be sold after 3 years for \$30,000. Use of the equipment would require an increase in net working capital (spare parts inventory) of \$4,000. The flux capacitor would have no effect on revenues, but it is expected to save the firm \$25,000 per year in before-tax operating costs, mainly labor. The firm's marginal tax rate is 40 percent. If the project's cost of capital is 10 percent, should the flux capacitor be purchased?

RISK AND RETURN

Read:

1. Chapter 12: Sections 12.1 - 12.3
2. Chapter 13 : Sections 13.4 - 13.6
3. The CAPM (pages 443-444)

RISK

- What determines the required return on an investment?
- Two things to remember about risk:
 - There is a reward for bearing risk.
 - The greater the risk, the greater the potential reward.

QUOTE

“October. This is one of the particularly dangerous months to speculate in stocks in. The others are July, January, September, April, November, May, March, June, December, August, and February.”

-- Mark Twain

RETURNS

- Cash flows for shares of stock:
 -
 -

RETURNS

- Example: You purchased 100 shares of stock in Golden Child Industries last year for \$50 per share. You just received a \$5 dividend. The market value of the stock is now \$65. What are your dollar and percentage returns?

RETURNS

- Example: You purchased 100 shares of stock in Better Days Ahead, Inc. last year for \$30 per share. You just received a \$1 dividend. The market value of the stock is now \$20. What are your dollar and percentage returns?

RETURNS

$$\text{Percentage return} = \frac{\text{Cash flows over period} + \text{Change in market value}}{\text{Beginning market value}}$$

- What about for bonds?

A FINANCIAL HISTORY LESSON: 1926 - 2016

<u>Investment</u>	<u>Average Return</u>	<u>Risk Premium</u>
Large Company Stocks	12.0%	
Small Company Stocks	16.6%	
Long-Term Corporate Bonds	6.3%	
Long-Term Govt. Bonds	6.0%	
U.S. Treasury Bills	3.4%	

Risk Premium: The excess return required from an investment in a risky asset over that required from a risk-free asset.

DIVERSIFICATION AND RISK

- Nondiversifiable Risk: A risk that influences a _____ of assets. Also referred to as _____ risk, market risk, or syncratic risk.

- Diversifiable Risk: A risk that affects at most a _____ of assets. Also referred to as _____ risk, unique risk, asset-specific risk, or _____ risk.

DIVERSIFICATION AND RISK

- The Principle of Diversification: Spreading an investment across a number of assets will eliminate _____, but _____, of the risk.

DIVERSIFICATION AND RISK

- Unsystematic risk is essentially eliminated by diversification, so a portfolio with many assets has almost no unsystematic risk.
- The expected return on an asset depends _____ that asset's _____ risk.

SYSTEMATIC RISK AND BETA

- Beta Coefficient (β): The amount of systematic risk present in a particular risky asset relative to the market portfolio (which has a beta of 1.0).

THE CAPITAL ASSET PRICING MODEL (CAPM)

- The CAPM: An equilibrium asset pricing model showing that the expected return for a particular asset depends on the pure time value of money plus a reward for bearing systematic risk.

$$\text{CAPM} \quad \Rightarrow \quad R_i = R_f + \beta_i (R_M - R_f)$$

SECURITY MARKET LINE



AN EXAMPLE

- What is the expected return on a share of stock whose beta is 1.15 if the risk-free rate is 4% and the expected return on the market is 10%?

- What if the beta is 2?

SUGGESTED PROBLEMS

- Concepts Review and Critical Thinking Questions:
 - Chapter 13: 1, 2, and 4

- Questions and Problems:
 - Chapter 12: 1, 2, 3, and 4 (a and b)
 - Chapter 13: 13, 14, 15, and 16

Market Efficiency

Market Efficiency

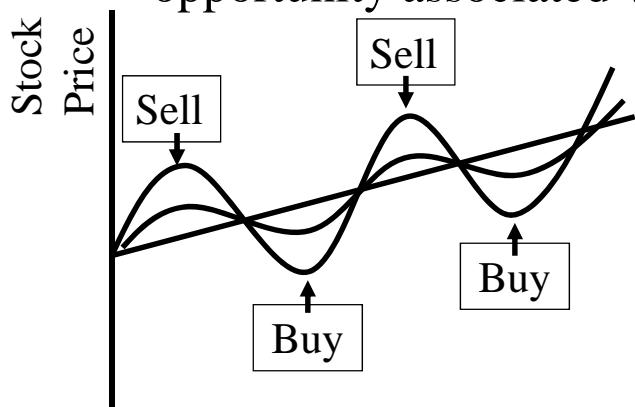
- ▶ What is the Efficient Markets Hypothesis?
- ▶ The set-up
- ▶ Prices reflect _____ ...
_____!
- ▶ Therefore, no unusual or excess profits from trading on information.

Levels of Market Efficiency

- ▶ Three forms (or levels) of market efficiency:
 - ▶ _____ Form Efficiency
 - ▶ _____ Form Efficiency
 - ▶ _____ Form Efficiency

Why Technical Analysis Fails

Investor behavior tends to eliminate any profit opportunity associated with stock price patterns.



If it were possible to make big money simply by finding “the pattern” in the stock price movements, everyone would do it and the profits would be competed away.

Market Efficiency

► What do we know?

► Market Reaction

► Reporting

Index Funds

Suggested Problems

► Concepts Review and Critical Thinking Questions:

► Chapter 12: 1, 2, 3, 5, 6, 9, and 10

The Cost of Capital

The Cost of Capital

- What are the sources of capital?
- What is the cost of capital?
 - The cost of capital reflects the investment opportunities and alternatives in the financial market available to suppliers of the firm's capital.

The Cost of Capital

- *Which* cost of capital?
- How do we calculate the cost of capital?

The Cost of Common Stock

- There are two ways:
 - 1.
 - 2.

The Dividend Growth Model

- Recall:
- Therefore,
- R_E is the required return on equity, or the cost of equity capital.

Dividend Growth Model Example

- Brian's Burritos just paid a \$2.00 dividend, which it expects to grow at 5% per year indefinitely. If the current price of this stock is \$25, what is Brian's cost of equity capital?

The Dividend Growth Model

- Problem: We know what the price of the stock is today and we know what the most recent dividend was. We seldom know the growth rate.
- Potential Solutions:
 - 1)
 - 2)
 - 3)

The Capital Asset Pricing Model (CAPM)

- Recall:
- We know the average historical risk premium and can look-up the risk-free rate (e.g., U.S. Treasury bills). We also can calculate or look up betas.
- Problem:

The Cost of Preferred Stock

- What do we know about the dividends of preferred stock?
- Recall:
- Therefore:

The Cost of Debt

- The cost of debt is the return that the firm's creditors demand on _____ borrowing.
- How do we get it?
- Recall:
 - Coupon Rate
 - Current Yield
 - Yield to Maturity

The Weighted Average Cost of Capital (WACC)

- Recall from the balance sheet:
- We are also interested in _____ cash flows.
- One benefit of debt (not available to equity) is the fact that interest payments are _____.

The After-tax Cost of Debt

The Weighted Average Cost of Capital (WACC)

$$WACC = \left[\left(\frac{E}{D + E + P} \right) \times R_E \right] + \left[\left(\frac{P}{D + E + P} \right) \times R_P \right] + \left[\left(\frac{D}{D + E + P} \right) \times R_D \times (1 - t) \right]$$

Keep in mind:

- _____ Capital Structure
- _____ Values **NOT** _____ Values

The Weighted Average Cost of Capital (WACC)

$$WACC = \left[\left(\frac{E}{D + E} \right) \times R_E \right] + \left[\left(\frac{D}{D + E} \right) \times R_D \times (1 - t) \right]$$

Keep in mind:

- _____ Capital Structure
- _____ Values **NOT** _____ Values

WACC Example

- The B. B. Lean Co. has 1.4 million shares of stock outstanding. The stock currently sells for \$20 per share. The firm's debt is publicly traded and was recently quoted at 93 percent of face value. It has a total face value of \$5 million and it is currently priced to yield 11 percent. The risk-free rate is 8 percent and the market risk premium is 7 percent. You've estimated that Lean's stock has a beta of 0.74. If the corporate tax rate is 34 percent, what is the WACC of Lean Co.?

More on WACC

- What does the WACC measure?
- What is the WACC for a firm financed with all equity?
- WACC and Company Valuation
- How do we estimate the appropriate discount rate for a project with different risk than our company?

Another WACC Example

- As CFO of Mickey's Mullets, Inc., you are trying to determine the firm's weighted average cost of capital (WACC). You have gathered the following information: The firm has 2,000 bonds, 35,000 preferred shares, and 100,000 common shares of stock outstanding. The bonds were 20 years bonds when they were issued 2 years ago, have a 9% coupon rate, paid annually, and a \$1,000 face value. The bonds currently have a yield to maturity of 6.5881%. The preferred stock pays a \$5.25 annual dividend and currently has a dividend yield of 7.5%. The firm just paid a \$1.20 dividend on the common stock yesterday, which has a beta of 0.95, and expects to maintain a constant 7 percent growth rate in dividends. You know the yield on short-term U.S. Treasuries is 5.3%, the historical market risk premium is 6 percent, and the firm has a marginal tax rate of 40 percent.

Chapter 14 Suggested Problems

- Concepts Review and Critical Thinking Questions:
 - 1, 4, 5 (the DCF model is the Dividend Growth Model), 7, and 8
- Questions and Problems:
 - 1, 2, 5, 7, 9, 14, 15, 16, 20, and 30 (except part e). Notice how problem 30 brings it all together (i.e., the big picture).

Review for Final Exam

Final Exam

Don't Forget:

Scan Sheet

Calculator

Pencil

Picture ID

Cheat Sheet

Things To Do...

Study both the notes and the book.

Remember the Panopto Recordings in Canvas.

Do suggested problems.

Do more problems!

Be comfortable with calculator, but understand concepts (e.g., timeline).

Get help if you are having problems.

Tips

Be Prepared

Read Questions Carefully

 What information is given?

 What is being asked?

Ask if something is not clear.

See the big picture!

Example #1

A firm has 1 million shares of common stock outstanding, each currently trading at \$40. The firm's stock has a beta of 1.3. The firm also has 10,000 bonds outstanding, each with a \$1,000 par value and an 8 percent annual coupon. The bonds mature in 22 years and currently sell for \$1,101.23. You also know that the market risk premium is 8.6%, the return on U.S. Treasury bills is 4.5 percent, and the firm has a marginal tax rate of 34%. What is the firm's WACC?

Example #2

Assume the same information as Example #1, but now you know the firm has a target debt/equity ratio of 0.2753. What is the firm's WACC?

Example #3

FirstYost, Inc. has 20 million shares of common stock outstanding that are currently being sold for \$25 per share. The firm's debt is publicly traded at 95 percent of its face value of \$180 million. The yield to maturity is 10 percent and the firm's cost of equity is 20 percent. FirstYost is interested in investing in a 5 year telecomm project. The project will require the purchase of \$25 million in equipment that will be depreciated straight-line to zero over 5 years, but is expected to be sold for \$4 million at the end of the project. In addition, the project will require an increase in net working capital of \$2 million. Sales are expected to be \$12.5 million annually and yearly operating costs are expected to be \$3 million. Given the project is an extension of its core business, the project risk is similar to the overall risk of the firm. If the firm's marginal tax rate is 40%, should the firm invest?

Example #4

Asset A has an expected return of 10%. The expected market return is 14% and the risk-free rate is 5%. What is asset A's beta?

Example #5

You purchased a bond for \$870 one year ago. Today, you receive your only interest payment for the year of \$70. The bond can currently be sold for \$925. What is your total percentage return on your investment?

Example #6

The hypothesis that market prices reflect all publicly-available information is called efficiency in the:

- (A) open form
- (B) strong form
- (C) semi-strong form
- (D) weak form
- (E) stable form?

Example #7

If a firm suffers reduced profits to the point of moving to a lower tax bracket, one would expect the depreciation tax shield, all else the same, to become _____.

- A. More valuable
- B. Less valuable
- C. Unchanged, since depreciation doesn't change
- D. Unchanged, because changes in tax rates don't matter once a project is in place.
- E. It is impossible to tell how it will change, if at all, without more information.

Example #8

Your company has a bond outstanding that has a \$1,000 par value and an 8% coupon rate, paid semiannually. If the bond matures in 16 years, and has a yield to maturity of 10%, how much would you pay for the bond today?

Example #9

Which of the following is most correct?

- A. The NPV and IRR rules will always lead to the same decision in choosing between mutually exclusive projects, unless one or both of the projects are "nonconventional" in the sense of having only one change of sign in the cash flow stream.
- B. The Modified Internal Rate of Return (MIRR) compounds cash outflows at the cost of capital.
- C. Conflicts between NPV and IRR rules arise in choosing between two mutually exclusive projects (that each have conventional cash flows) when the cost of capital exceeds the crossover point.
- D. The discounted payback method overcomes the problems that the payback method has with cash flows occurring after the payback period.
- E. None of the statements above is correct.

Example #10

Yost Rocks, Inc. just paid a \$2 dividend, which it expects to maintain for the foreseeable future. The firm has a beta of 1.2 and U.S. Treasury bills yield 3%. If the market risk premium is 9.6%, what is the current price of the stock?

#10

If the firm expects to maintain a constant 3% growth rate in dividends, what would the price be today?

#10

If the firm was unable to pay a dividend for the next 4 years, but then paid a \$2 dividend which grew at a constant 3%, what would the price be today?

Answers

- | | | | |
|----|---------------------|-----|------------------------------|
| 1. | 13.3% | 6. | C |
| 2. | 13.3% | 7. | B |
| 3. | NPV = \$17,723; Yes | 8. | \$841.97 |
| 4. | 0.56 | 9. | E |
| 5. | 14.37% | 10. | \$13.77; \$17.88;
\$10.09 |