Solutions for Principles of Managerial Finance 15th Edition by Zutter

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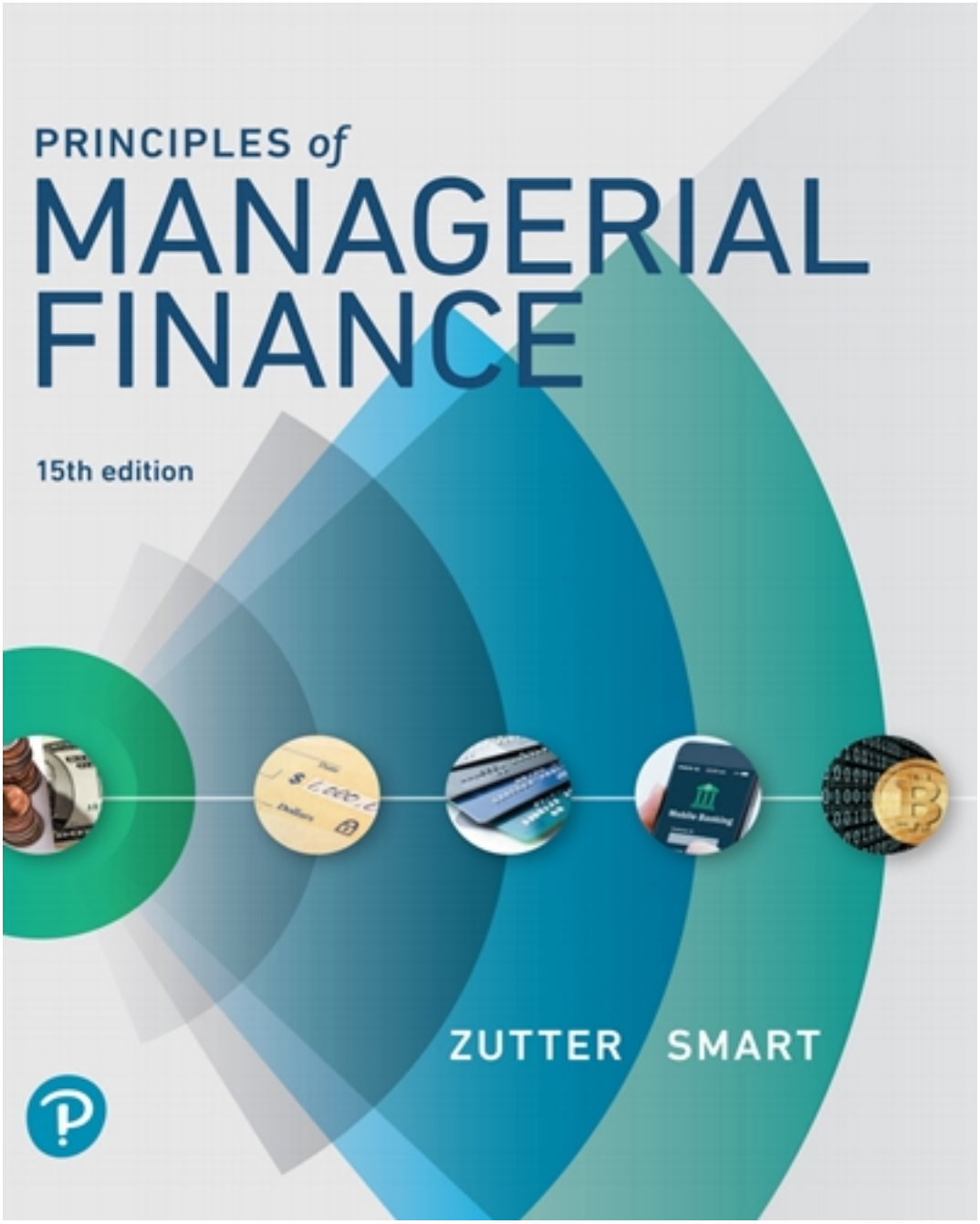

Solutions

Chapter 2
The Financial-Market Environment

■ Instructor's Resources

Chapter Overview

This chapter provides an overview of the institutional framework for channeling funds from net savers to net borrowers. The discussion begins with three basic types of financial institutions—commercial banks, investment banks, and the shadow-banking system. Financial markets more broadly are then introduced along with the distinction between (i) money and capital markets and (ii) primary and secondary markets. Considerable attention is also focused on the oft-misunderstood topic of "efficient markets." In the capital-markets discussion, the step-by-step process for Initial Public Offerings of common stock is described to provide a real-world example of funds travelling from net savers to net borrowers and illustrate the role investment bankers play in that journey. Next, key features of U.S. financial regulation—deposit insurance, the Securities Act of 1933, and the Securities Exchange Act of 1934, and Dodd Frank are—are laid out. The history of Glass-Steagall—enacted in the 1930s to prevent future banking crises by separating commercial and investment banking and repealed in 1999— is offered to illustrate the evolution of financial markets and regulatory responses to those changes. The chapter concludes with an exploration of the role of housing finance in the Financial Crisis and the Great Recession of 2007–09.

■ Answers to Review Questions

2-1. Financial institutions are intermediaries that facilitate the flow of individual, business, and government savings into loans and investments. Broadly speaking, net savers (primarily individuals) prefer low risk and easy access to their money while net borrowers (businesses and government) would like to take risk with the funds and tie them up for a longer term. Financial institutions transform loans and investments into forms savers prefer to hold (such as deposits) or help net borrowers issue debt and equity instruments tailored to saver preferences.

2-2 Overall, the same entities that supply funds—individuals, businesses, and governments—also demand them, so these three groups are all financial-institution customers. That said, the key demanders of funds (net borrowers) are businesses and governments while the key suppliers (net savers) are individuals.

2-3 Commercial banks, investment banks, and the shadow-banking system are all financial institutions. Broadly speaking, commercial banks transform the deposits of net savers into loans to net borrowers. Investment banks, in contrast, do not "transform" the liquidity and riskiness of financial assets. Instead, they help "match" demanders and issuers of debt and equity instruments. Specifically, investment banks instruct companies on the best vehicles for raising capital, advise them on mergers/restructuring, and engage in trading and market-making to support their consulting function. Finally, the shadow-banking system performs services for net savers and borrowers similar to commercial banks—but without issuing deposits. By not relying on deposit funding, shadow banks can evade prudential regulation designed to constrain risk-taking by ordinary banks.

2-4. Financial markets facilitate direct interaction of suppliers and demanders of funds. In primary markets, debt and equity instruments are sold the first time—a direct exchange between the firm or government issuing securities and the purchasers. An example is Microsoft Corporation selling new shares of common stock to private investors. In secondary markets, previous issued securities are traded subsequent times; the original issuers receive no new funds. An example is an investor buying a share of outstanding Microsoft common stock from another investor through a broker. Put simply, primary markets feature sales of "new" securities while "used" security transactions take place in secondary markets. Primary and secondary markets have a symbiotic relationship—the easier the resale of a financial asset in a secondary market, the easier the initial sale of that asset in a primary market. Similarly, financial institutions and financial markets are far from independent. Commercial banks, for example, hold large inventories of U.S. Treasury securities to improve the liquidity and risk of their asset portfolio, and strong bank demand makes it easier for the Treasury to sell debt in the first place. Because banks have taken deposits and made loans since the days of goldsmiths in Medieval Europe, they enjoy a comparative advantage in originating and monitoring commercial loans. Aware of this advantage, the capital markets watch bank lending for clues about borrower financial strength. When a commercial bank announces a new loan to a publicly traded firm, that firm's stock price typically rises.

2-5 A private placement is the sale of a new security directly to an investor or a small group of sophisticated investors (such as insurance companies and pension funds). A public offering, in contrast, is the sale of newly issued stock or bonds to the public at large. Firms typically rely on public offerings when they need large sums.

2-6. The money market features trading in short-term, highly marketable debt instruments; "short term" here means an original maturity of one year or less. Money-market instruments typically carry low risk of capital losses. Examples of money-market instruments include U.S. Treasury bills, commercial paper, and negotiable certificates of deposit (issued by large commercial banks). The Eurocurrency market is the international analogue of the U.S. money market. This market features loans of currency held in banks outside the country where it is legal tender. Participants typically use the Eurocurrency market to evade domestic regulations and tax laws. The term stems from the European origin of this market; "Eurocurrency" has nothing to do with the euro *per se* and is no longer specific to Europe.

2-7. The capital market features trading in instruments with original maturities exceeding one year such as bonds and stock (common and preferred). Capital-market instruments are exchanged in broker and dealer markets. In broker markets, a broker coordinates buy and sell orders, executing trades at the midpoint of the bid/ask spread (the highest price a buyer is willing to pay minus the lowest price a seller is willing to accept). The best known broker market is the NYSE, which accounts for more than 25% of stock-market trades. In dealer markets, a market maker executes buy and sell orders using her personal inventory and two distinct trades. For example, an investor might sell the dealer Microsoft stock at the bid price and then, in an independent transaction, another investor would buy Microsoft stock from the dealer at the ask price. "Ask" exceeds "bid," so the dealer's reward for maintaining an inventory of Microsoft stock is the opportunity to "buy low, sell high." The difference, in short, between broker and dealer markets turns on whether traders or dealers provide the liquidity.

2-8 Firms see the capital market as a source of external finance for long-term projects. Put another way, they sell new bonds and stock to raise funds to build factories, launch marketing campaigns, and expand into new markets. Accordingly, they want a liquid market—one "deep" enough to accept newly issued securities at favorable prices. Investors, in contrast, see the capital market as a savings vehicle for long-term needs like retirement. As citizens of the macroeconomy, investors would also like the capital market to steer scarce funds to the most productive uses. To these ends, investors want an efficient capital market—one where securities prices reflect all available information and react swiftly to new information. Capital-market efficiency means investors need not waste time trying to identify over or undervalued securities or exploitable patterns in securities prices. Instead, they can maximize long-term returns by putting their savings in diversified mutual funds (i.e., avoiding countless hours studying individual stocks and bonds). Investors will also enjoy higher aggregate growth of output and employment from the spotlight securities prices shine on firms most able to profitably use their savings.

2-9 The first years of Great Depression featured the worst contraction in American history. Between August 1929 and March 1933, industrial production fell 52%, the Dow Jones Industrial Average tumbled 89%, unemployment soared to nearly 25%, and roughly 9,000 banks failed (37% of those operating in December 1929). Franklin Roosevelt won the 1932 election with a mandate to restore prosperity and prevent future depressions. Much of the U.S. framework for financial and financial-institution regulation stems from the First New Deal (1933–34). This framework addressed specific factors thought to have caused the slump. To protect depositors from losses in bank failures, the Banking Act of 1933 created federal deposit insurance. To prevent failures in the first place, the Act also barred commercial banks from security underwriting, which was thought to pose dangerous additional risks. To head off fraudulent investment schemes like those preceding the stock-market crash of 1929, the Securities Act of 1933 and Securities Exchange Act of 1934 forced companies wishing to issue public securities to disclose information about their financial condition.

2-10 Both Acts required companies wishing to participate in securities markets to disclose significant information to the public. The Securities Act of 1933 focused on the primary market, compelling sellers of new securities provide reasonably accurate portrayals of their firms to prospective investors. The Securities Exchange Act of 1934, in contrast, regulated trading in secondary markets; forcing publicly traded companies to keep investors informed about firm condition on an ongoing basis. The latter Act also created the Securities Exchange Commission to enforce federal securities laws.

2-11 Angel investors and venture capitalists are both sources of private equity. "Angels" are usually wealthy individuals who fund promising start-ups in return for a slice of firm equity. Venture capitalists, in contrast, are businesses that pool contributions from individuals (often institutional investors like university endowments and pension funds) and invest those funds in promising start-ups. In short, angels pick "winners" themselves whereas venture capitalists pick "winners" for their clients.

2-12 Venture capitalists (VCs) are organized as (i) limited partnerships (most common), (ii) small business investment companies (SBICs), (iii) financial funds, and (iv) corporate funds. The principal difference is how the VC was created. The federal government charters SBICs. Financial institutions (usually commercial banks), in contrast, create financial funds as subsidiaries while nonfinancial firms launch corporate funds, sometimes as subsidiaries. Unlike other VC types, limited partnerships are launched by private individuals. All VCs use a legal agreement to specify deal structure and pricing. Deal structure allocates responsibilities between the start-up and VC and may include constraints on the firm to enhance its chance of success and mitigate VC risk. Pricing depends on the (i) value of the start-up, (ii) perceived risk of its business operations, and (iii) amount of funding needed. In general, VCs provide less funding and require a greater ownership stake when the firm is the early stages of development.

2-13 Firms wishing to go public must (i) secure approval from current shareholders, (ii) obtain certification of the accuracy of their financial documents from company auditors and lawyers, (iii) hire an originating investment bank, (iv) file a registration statement with the Securities and Exchange Commission (SEC), (v) participate in roadshows with the investment bank to spark interest among potential investors and learn about a suitable issuing price, (vi) obtain final SEC approval after the investment bank has finalized issue terms and offer price, and (vii) sell the issue to the investment bank at the guarantee price. The investment bank will then assume the risk of placing the issue with primary-market investors.

2-14 Broadly speaking, an investment bank facilitates a firm's issuance of new securities. In a common-stock issue, the bank helps the issuer file a registration statement with the SEC and market the offering to potential investors in a roadshow. The bank also sets the offering price and other terms of the issue. All along the way, the originating investment bank provides advice to help the issuer maximize the volume of funds raised. Finally, the originating bank buys the new securities from the issuer at the guarantee price and then resells the issue to primary-market investors. Sometimes the bank will form a syndicate of other investment banks to share the financial risk of placing the issue.

2-15 Securitization is the process of creating highly liquid marketable securities out of illiquid assets. The first assets securitized on a large scale were residential mortgages—securitizers "pooled" the mortgages and then issued debt claims backed by cash flows from those pools. In other words, the interest and principal on "mortgage-backed" securities (MBSs) paid to investors came from mortgage payments by residential homeowners. Securitization facilitated investment in mortgages by unbundling risk. Lenders might need their funds before the mortgage is repaid or lose money if the homeowner defaults. Securitization allows mortgage originators to earn fees from making the loans but then reduce liquidity and credit risk by selling the mortgage to a securitizer (who, in turn, creates a security with cash flows tailored to the preferences of market investors). Securitizing mortgages promotes efficient risk sharing, which in turn, makes the real-estate sector a more attractive place to invest.

2-16 A mortgage-backed security (MBS) is a debt instrument backed by residential mortgages. "Backed" means principal and interest paid to MBS investors come from payments by residential homeowners with mortgages in the underlying pool. The primary MBS risk is credit risk, the chance homeowners will not make monthly principal and interest payments as stipulated in their mortgage contracts.

2-17 When a home buyer takes out a mortgage, initial equity—the difference between purchase price and mortgage-loan balance—is simply the down payment. Over time, equity will rise as the borrower reduces the mortgage balance with monthly principal and interest payments. Should housing prices rise, the gap between house value and mortgage balance will widen further—that is to say, home equity rises even faster. If a borrower needs to skip a mortgage payment, the lender will typically allow her to tap equity. Rising prices also imply a vibrant housing market, so a borrower permanently unable to make the monthly payments can easily sell her home to pay off the mortgage.

2-18. A large decline in housing prices could push the value of a borrower's home below the mortgage balance. With negative equity, the borrower could hold the loss at the original down payment by allowing the lender to foreclose. The only cost would be the negative impact on the borrower's credit score. But if the decline in housing prices has led many other homeowners to walk away from their mortgages, this borrower may not be too concerned about the blot on her credit report, thinking future lenders will understand the circumstances.

2-19 The Great Recession of 2007–09 illustrates how a financial-sector crisis can metastasize. In the years running up to the recession, securitizers increasingly pooled mortgage loans to borrowers with less-than-stellar credit. At the time, "subprime" loans seemed relatively low risk because of rapidly rising housing prices. Then, when home prices began to level off (and even dip in some markets), mortgage delinquencies and defaults started climbing. With payments on underlying mortgages falling, the value of mortgage-back securities (MBSs) began to fall as well. Large investment banks (like Lehmann Brothers) and commercial banks (like Citibank) held considerable inventories of now-problematic MBSs. To offset rising MBS losses, commercial banks sharply curbed lending, which produced an economy-wide decline in consumer and investment spending. Investment banks, meanwhile, were large players in the money market—Lehmann, for example, routinely sold a large amount of commercial paper (short-term unsecured corporate debt). When the firm collapsed almost overnight (rendering its commercial paper worthless), the money market froze as investors became wary of all unsecured debt. Now, nonfinancial companies that regularly tapped the money market for short-term funding found themselves in squeeze. They responded by slashing costs and hoarding cash, which put even more downward pressure on economy-wide consumer and investment spending.

■ Suggested Answer to *Focus on Ethics* Box: Should Insider Trading Be Legal?

Suppose insider trading were legal. Would it still present an ethical issue for insiders wishing to trade on non-public information?

Yes, even if legal, insider trading could still raise ethical concerns because of potential conflict between an executive's duty to shareholders and her concern for personal wealth. Suppose, for example, a senior executive with considerable firm stock learned of safety issues with a popular product so serious a massive recall might be necessary. The executive has a fiduciary duty to work with the senior management team on a plan to contain damage to firm stock. Were insider trading legal, she might be tempted to hedge the possibility the plan might fail by dumping her stock quietly before the market became aware of the problem.

■ Answers to Warm-Up Exercises

E2-1 ***Suppliers and demanders of funds*** **(LG 1)**

Answer: Individuals as a whole (i.e., the household sector) spend less than they earn and invest the surplus in firms directly (by purchasing their stocks and bonds) or indirectly (through financial institutions —as in making deposits a commercial bank who then lends the funds to firms). If individuals consume more/save less, fewer dollars will be available for investment, thereby driving up the cost of those funds to net borrowers in the form of higher required returns/interest rates. Over time, the rise in returns/rates will reduce investment and economic growth, which means lower growth in incomes and employment.

E2-2 ***Raising funds*** **(LG 2)**

Answer: Gaga can raise the needed $10 million by borrowing from a commercial bank or issuing stocks or bonds in the primary market. To obtain $10 million from a commercial bank, Gaga will likely need an ongoing deposit relationship with that bank. Such a relationship gives the bank low-cost information about Gaga's cash flows that reduce the cost of lending to the firm. Over time, as Gaga repeatedly borrows and repays the loans, the bank will collect even more information, further reducing the cost of lending. Should Gaga wish to sell bonds or stock to raise the $10 million— that is, tap the financial markets directly for the funding rather than a commercial bank — its first step will be to retain an investment bank for needed expertise, such as advice on what securities to sell and terms to offer. Investment banks offer valuable expertise earned over time through market-making/trading activities and advising many firms on securities sales

E2-3 ***Money market vs. capital market*** **(LG 3)**

Answer: Short-term, highly liquid, low-risk debt trades in the money market. Reputable firms needing cash for one year or less to fund ongoing operations have traditionally tapped the money market. Suppose a well-known, financially sound firm specializing in recreational-vehicle (RV) sales needs inventory for the summer driving/camping season. The company might sell 90-day commercial paper for money to buy RVs wholesale and then pay off the debt with proceeds from summer sales. Firms sell new bonds and stock in the capital market (where debt and equity with maturities exceeding one year trade) to fund long-term projects like construction of new factories.

E2-4 ***Biggest benefit of government regulation*** **(LG 4)**

Answer: The scale and scope of government involvement in the economy will always be subject to debate, but most economists agree on the need for some financial-sector regulation. Well-designed regulation promotes confidence in the financial system, and individuals and businesses who trust financial institutions and markets are more likely to save and invest. More savings and investment, in turn, confers economy-wide benefits through the resulting growth in output, incomes, and employment.

E2-5 ***Determining net proceeds from stock sale*** **(LG 5)**

Answer: Net proceeds = (1,000,000 × $20 x 0.95) + (250,000 × $20 × 0.90)
= $19,000,000 + $4,500,000 = $23,500,000

E2-6. ***Mortgage-backed securities (MBSs)*** **(LG 6)**

Answer: Students should start by asking about the following:

a. The location of houses securing the underlying mortgages (As the old saying goes, the three most important determinants of real-estate prices are "location, location, location.")

b. The percentage of underlying mortgages in foreclosure or "under water" (i.e., with market values below the remaining balance) in the region

c. The percentage of underlying mortgages currently delinquent

d. Any neighborhood restrictions on renting and about the strength of the regional rental market

e. The precedence of MBS investors in bankruptcy (i.e., would other lenders have a senior claim on the houses securing the mortgages?)

f. The condition of homes securing the underlying mortgages (e.g., would repairs be needed to sell or rent in the event of foreclosure?)

g. The creditworthiness of homeowners still current on their mortgages (i.e., how likely is it borrowers will be unable to make timely payments in the future?)

h. The percentage of pool mortgages with adjustable interest rates resetting soon (particularly in a rising rate environment because a reset means borrowers will face higher mortgage payments)

■ Solutions to Problems

P2-1. ***Transactions costs*** **(LG3)**

a. Bid/Ask Spread = Ask Price – Bid Price = $263,770 – $262,850 = $920

b. If Scottrade routes the buy order to the NYSE (a broker market), a market maker will execute the trade at the midpoint of the bid/ask spread. In this transaction, the market maker serves as broker, bringing your buy order together with someone else's sell order and forgoing the bid/ask spread, so total transactions cost is only the brokerage commission paid to Scottrade – $7.

c. If Scottrade routes the buy order to the NASDAQ (a dealer market), the market maker will execute the order from her own inventory and charge half the bid/ask spread. So total transactions costs will be (0.50 × $920) plus the $7 commission or $467.

d. The midpoint of the bid/ask spread is the implied market value of the stock, and the market value of the trade equals the product of the market value of the stock and the number of shares traded.

Midpoint of bid/ask spread = ($263,770 + $262,850) / 2 = $263,310

So, implied market value of the trade = $263,310 × 1 share = $263,310

P2-2. ***Transactions costs*** **(LG 3)**

a. Transactions costs = (Number of shares) × [(0.50) x (Bid/ask spread)] + Brokerage commission

$59.95 = [(1,200) × (0.50) × (Bid/ask spread)] + $29.95

Bid/ask spread = ($59.95 – $29.95) / 600 = $0.05

b. Twitter is listed on the NYSE, a broker market. So, had Charles Schwab routed the order to the NYSE, it could have been executed against a buy order, and total transaction costs would have been only the $29.95 brokerage commission. But transaction costs included half the bid/ask spread per share traded, so either (i) the order went to the NYSE, no public buy order was available, and the market maker bought the 1,200 shares for her inventory (at a cost of half the bid/ask spread per share) or (ii) Charles Schwab routed the order to a dealer market like NASDAQ, and a market maker added the shares to her inventory (at half the spread per share).

c. Transactions costs = (Number of shares) × [(0.50) × (Bid/ask spread)] + Brokerage commission

$47.95 = [(1,200) × (0.50) × (Bid/ask spread)] + $29.95

Bid/ask spread = ($47.95 – $29.95) / 600 = $0.03

d. Total transactions costs = Transactions costs from sale + Transactions costs from purchase

Total transactions costs = $59.95 + $47.95 = **$107. 90**

Costs could have been reduced costs by placing both trades online with a request for routing to the NYSE where the chance of crossing with other public orders is greatest. Had no market maker been necessary, total costs would have been only the $4.95 Schwab commission per trade.

P2-3. ***Initial public offerings*** **(LG 5)** 

a. Total proceeds = (IPO offer price) × (IPO shares issued) = $11 × 10.5 million = $115,500,000

b. Percentage underwriting discount = (Underwriting discount) / Offer price = $0.77/$11 = 7%

c. Underwriting fee ($) = ($0.77) × (10.5 million shares) = $8,085,000.
Or, (Percentage underwriting discount) × (Total proceeds) = (7%) × ($115,500,000) = $8,085,000

d. Net proceeds = Total proceeds – Underwriting fee = $115,500,000 – $8,085,000 = $107,415,000

e. IPO underpricing = [(Market price) – (Offer price)] / Offer price = [$13.41 – $11] / $11 = 21.9%

f. Market capitalization = (Market price of stock) × (Number of shares outstanding)
= ($13.41) × (85,489,470) = **$1,146,413,792.70**

P2-4. ***Initial public offerings*** **(LG5)**

a. Total proceeds = (IPO offer price) × (Number of IPO shares issued) = ($18) × (8.25 million)
= $148,500,000

b. Underwriting fee ($) = (6.5%) × ($148,500,000) = $9,652,500

c. Net proceeds = Total proceeds – Underwriting fee = $148,500,000 – $9,652,500 = $138,847,500

d. Market capitalization = (Market price of stock) × (Number of shares outstanding)
= ($16.10) × (31,025,936) = $499,517,569.6

e. IPO underpricing = [(Market price) – (Offer price)] / Offer price = [$16.10 – $18] / $18 = –10.56%

f. Negative underpricing indicates secondary-market investors are not willing to pay as much for existing shares as primary-market investors were for new shares – a rare case of primary-market investors losing money on IPO shares.

P2-5. ***Ethics problem*** **(LG 4)**

An ethical issue arises because of access to material nonpublic information and the potential conflict between an insider's duty to shareholders and concern for personal wealth. For example, suppose an insider knows about a planned acquisition and quietly buys shares of the target firm— a move likely to be lucrative because, on average, the stock price of targets jumps on news of an acquisition. In this example, the insider puts personal gain ahead of shareholder welfare. Other market participants might observe the insider's behavior and buy shares of the target firm as well— thereby boosting the target's share price and raising the cost of the acquisition.

■ Case

Case studies are available on www.pearson.com/mylab/finance.

Pros and Cons of Being Publicly Listed

a. Going public will enable Robo-Tech to raise more external capital without additional bankruptcy risk. [Unlike creditors, shareholders cannot take the firm to bankruptcy court if expected dividends are not paid.] Going public will also allow the company to continue operating after Mr. Bradley (the owner/CEO) retires or dies and, before then, insulate him from personal liability for Robo-Tech debts. Finally, going public will give Mr. Bradley a chance to sell personal shares to cash in on his work building the firm or diversify his wealth. [Currently, his human capital and financial wealth are both largely tied up Robo-Tech. After the IPO, Mr. Bradley could sell some Robo-Tech shares and invest in the stocks and bonds of companies in other industries.]

b. The disadvantages of going public include (i) more burdensome SEC reporting requirements, (ii) potential dilution of Mr. Bradley's managerial control (e.g., if the IPO left him with fewer than 50% of Robo-Tech shares, a takeover artist could purchase controlling interest and force his removal as CEO), and finally (iii) double taxation of Mr. Bradley's income (i.e., Robo-Tech will pay corporate income tax on firm profits, and Mr. Bradley will pay personal income tax on dividends/capital gains from company stock).

c. Robo-Tech is probably too small to meet NYSE and NASDAQ listing requirements. The firm will probably trade over-the-counter or on regional exchanges.

d. If the capital market is efficient, the price of Robo-Tech stock will provide an unbiased estimate of firm value. Efficiency also implies movements in stock price following news about the company will also be unbiased. Robo-Tech will, therefore, have an external real-time "report card" on management actions. For example, suppose extensive research led management to believe moving several U.S. plants to Latin America would create value for shareholders. If firm stock dipped on the announcement, other things equal, management would know the market did not share their enthusiasm.

■ Spreadsheet Exercise

Answers to Chapter 2's MuleSoft spreadsheet problem are available on www.pearson.com/mylab/finance.

■ Group Exercise

There is no group exercise for Chapter 2.

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■ Instructor's Resources

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■ Suggested Answer to *Opener-in-Review* Question

In the chapter opener, students learned about Airbnb's spectacular rise. In 2009, Sequoia Capital invested $600,000 in this "unicorn" in return for a 10% ownership stake. These figures imply Airbnb was worth $6 billion at the time. If the company was worth $31 billion in 2017, students were then asked, how much did the value of Airbnb grow in that eight-year period? The answer is 516,566.7% [($31 billion/$6 million – 1) x 100]

■ Answers to Review Questions

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2-8 Firms see the capital market as a source of external finance for long-term projects. Put another way, they sell new bonds and stock to raise funds to build factories, launch marketing campaigns, and expand into new markets. Accordingly, they want a liquid market—one "deep" enough to accept newly issued securities at favorable prices. Investors, in contrast, see the capital market as a savings vehicle for long-term needs like retirement. As citizens of the macroeconomy, investors would also like the capital market to steer scarce funds to the most productive uses. To these ends, investors want an efficient capital market—one where securities prices reflect all available information and react swiftly to new information. Capital-market efficiency means investors need not waste time trying to identify over or undervalued securities or exploitable patterns in securities prices. Instead, they can maximize long-term returns by putting their savings in diversified mutual funds (i.e., avoiding countless hours studying individual stocks and bonds). Investors will also enjoy higher aggregate growth of output and employment from the spotlight securities prices shine on firms most able to profitably use their savings.

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2-12 Venture capitalists (VCs) are organized as (i) limited partnerships (most common), (ii) small business investment companies (SBICs), (iii) financial funds, and (iv) corporate funds. The principal difference is how the VC was created. The federal government charters SBICs. Financial institutions (usually commercial banks), in contrast, create financial funds as subsidiaries while nonfinancial firms launch corporate funds, sometimes as subsidiaries. Unlike other VC types, limited partnerships are launched by private individuals. All VCs use a legal agreement to specify deal structure and pricing. Deal structure allocates responsibilities between the start-up and VC and may include constraints on the firm to enhance its chance of success and mitigate VC risk. Pricing depends on the (i) value of the start-up, (ii) perceived risk of its business operations, and (iii) amount of funding needed. In general, VCs provide less funding and require a greater ownership stake when the firm is the early stages of development.

2-13 Firms wishing to go public must (i) secure approval from current shareholders, (ii) obtain certification of the accuracy of their financial documents from company auditors and lawyers, (iii) hire an originating investment bank, (iv) file a registration statement with the Securities and Exchange Commission (SEC), (v) participate in roadshows with the investment bank to spark interest among potential investors and learn about a suitable issuing price, (vi) obtain final SEC approval after the investment bank has finalized issue terms and offer price, and (vii) sell the issue to the investment bank at the guarantee price. The investment bank will then assume the risk of placing the issue with primary-market investors.

2-14 Broadly speaking, an investment bank facilitates a firm's issuance of new securities. In a common-stock issue, the bank helps the issuer file a registration statement with the SEC and market the offering to potential investors in a roadshow. The bank also sets the offering price and other terms of the issue. All along the way, the originating investment bank provides advice to help the issuer maximize the volume of funds raised. Finally, the originating bank buys the new securities from the issuer at the guarantee price and then resells the issue to primary-market investors. Sometimes the bank will form a syndicate of other investment banks to share the financial risk of placing the issue.

2-15 Securitization is the process of creating highly liquid marketable securities out of illiquid assets. The first assets securitized on a large scale were residential mortgages—securitizers "pooled" the mortgages and then issued debt claims backed by cash flows from those pools. In other words, the interest and principal on "mortgage-backed" securities (MBSs) paid to investors came from mortgage payments by residential homeowners. Securitization facilitated investment in mortgages by unbundling risk. Lenders might need their funds before the mortgage is repaid or lose money if the homeowner defaults. Securitization allows mortgage originators to earn fees from making the loans but then reduce liquidity and credit risk by selling the mortgage to a securitizer (who, in turn, creates a security with cash flows tailored to the preferences of market investors). Securitizing mortgages promotes efficient risk sharing, which in turn, makes the real-estate sector a more attractive place to invest.

2-16 A mortgage-backed security (MBS) is a debt instrument backed by residential mortgages. "Backed" means principal and interest paid to MBS investors come from payments by residential homeowners with mortgages in the underlying pool. The primary MBS risk is credit risk, the chance homeowners will not make monthly principal and interest payments as stipulated in their mortgage contracts.

2-17 When a home buyer takes out a mortgage, initial equity—the difference between purchase price and mortgage-loan balance—is simply the down payment. Over time, equity will rise as the borrower reduces the mortgage balance with monthly principal and interest payments. Should housing prices rise, the gap between house value and mortgage balance will widen further—that is to say, home equity rises even faster. If a borrower needs to skip a mortgage payment, the lender will typically allow her to tap equity. Rising prices also imply a vibrant housing market, so a borrower permanently unable to make the monthly payments can easily sell her home to pay off the mortgage.

2-18. A large decline in housing prices could push the value of a borrower's home below the mortgage balance. With negative equity, the borrower could hold the loss at the original down payment by allowing the lender to foreclose. The only cost would be the negative impact on the borrower's credit score. But if the decline in housing prices has led many other homeowners to walk away from their mortgages, this borrower may not be too concerned about the blot on her credit report, thinking future lenders will understand the circumstances.

2-19 The Great Recession of 2007–09 illustrates how a financial-sector crisis can metastasize. In the years running up to the recession, securitizers increasingly pooled mortgage loans to borrowers with less-than-stellar credit. At the time, "subprime" loans seemed relatively low risk because of rapidly rising housing prices. Then, when home prices began to level off (and even dip in some markets), mortgage delinquencies and defaults started climbing. With payments on underlying mortgages falling, the value of mortgage-back securities (MBSs) began to fall as well. Large investment banks (like Lehmann Brothers) and commercial banks (like Citibank) held considerable inventories of now-problematic MBSs. To offset rising MBS losses, commercial banks sharply curbed lending, which produced an economy-wide decline in consumer and investment spending. Investment banks, meanwhile, were large players in the money market—Lehmann, for example, routinely sold a large amount of commercial paper (short-term unsecured corporate debt). When the firm collapsed almost overnight (rendering its commercial paper worthless), the money market froze as investors became wary of all unsecured debt. Now, nonfinancial companies that regularly tapped the money market for short-term funding found themselves in squeeze. They responded by slashing costs and hoarding cash, which put even more downward pressure on economy-wide consumer and investment spending.

■ Suggested Answer to *Focus on Practice* Box: Berkshire Hathaway: Can Buffet Be Replaced?

Thinking about the principal-agent problem from Chapter 1, why might Buffett use different incentive schemes in firms with different growth prospects?

In this *Focus on Practice* box, the principal is the funding provider—Warren Buffett and Berkshire Hathaway— while the agent is the firm owner/manager receiving the funds. Buffett wants the highest return on his investment over a specific time horizon; the owner/manager may wish to pursue other short-term goals with the money. For a firm in the early stages of development, growth is typically paramount, so Buffett might insist on an incentive scheme rewarding rapid growth of sales rather than profits. [Amazon's initial business plan, for example, predicted no profit for at least for four to five years.] As the firm matured, Buffett would likely reward earnings growth rather than sales growth.

■ Suggested Answer to *Focus on Ethics* Box: Should Insider Trading Be Legal?

Suppose insider trading were legal. Would it still present an ethical issue for insiders wishing to trade on non-public information?

Yes, even if legal, insider trading could still raise ethical concerns because of potential conflict between an executive's duty to shareholders and her concern for personal wealth. Suppose, for example, a senior executive with considerable firm stock learned of safety issues with a popular product so serious a massive recall might be necessary. The executive has a fiduciary duty to work with the senior management team on a plan to contain damage to firm stock. Were insider trading legal, she might be tempted to hedge the possibility the plan might fail by dumping her stock quietly before the market became aware of the problem.

■ Answers to Warm-Up Exercises

E2-1 ***Suppliers and demanders of funds*** **(LG 1)**

Answer: Individuals as a whole (i.e., the household sector) spend less than they earn and invest the surplus in firms directly (by purchasing their stocks and bonds) or indirectly (through financial institutions —as in making deposits a commercial bank who then lends the funds to firms). If individuals consume more/save less, fewer dollars will be available for investment, thereby driving up the cost of those funds to net borrowers in the form of higher required returns/interest rates. Over time, the rise in returns/rates will reduce investment and economic growth, which means lower growth in incomes and employment.

E2-2 ***Raising funds*** **(LG 2)**

Answer: Gaga can raise the needed $10 million by borrowing from a commercial bank or issuing stocks or bonds in the primary market. To obtain $10 million from a commercial bank, Gaga will likely need an ongoing deposit relationship with that bank. Such a relationship gives the bank low-cost information about Gaga's cash flows that reduce the cost of lending to the firm. Over time, as Gaga repeatedly borrows and repays the loans, the bank will collect even more information, further reducing the cost of lending. Should Gaga wish to sell bonds or stock to raise the $10 million— that is, tap the financial markets directly for the funding rather than a commercial bank — its first step will be to retain an investment bank for needed expertise, such as advice on what securities to sell and terms to offer. Investment banks offer valuable expertise earned over time through market-making/trading activities and advising many firms on securities sales

E2-3 ***Money market vs. capital market*** **(LG 3)**

Answer: Short-term, highly liquid, low-risk debt trades in the money market. Reputable firms needing cash for one year or less to fund ongoing operations have traditionally tapped the money market. Suppose a well-known, financially sound firm specializing in recreational-vehicle (RV) sales needs inventory for the summer driving/camping season. The company might sell 90-day commercial paper for money to buy RVs wholesale and then pay off the debt with proceeds from summer sales. Firms sell new bonds and stock in the capital market (where debt and equity with maturities exceeding one year trade) to fund long-term projects like construction of new factories.

E2-4 ***Biggest benefit of government regulation*** **(LG 4)**

Answer: The scale and scope of government involvement in the economy will always be subject to debate, but most economists agree on the need for some financial-sector regulation. Well-designed regulation promotes confidence in the financial system, and individuals and businesses who trust financial institutions and markets are more likely to save and invest. More savings and investment, in turn, confers economy-wide benefits through the resulting growth in output, incomes, and employment.

E2-5 ***Determining net proceeds from stock sale*** **(LG 5)**

Answer: Net proceeds = (1,000,000 × $20 x 0.95) + (250,000 × $20 × 0.90)
= $19,000,000 + $4,500,000 = $23,500,000

E2-6. ***Mortgage-backed securities (MBSs)*** **(LG 6)**

Answer: Students should start by asking about the following:

a. The location of houses securing the underlying mortgages (As the old saying goes, the three most important determinants of real-estate prices are "location, location, location.")
b. The percentage of underlying mortgages in foreclosure or "under water" (i.e., with market values below the remaining balance) in the region
c. The percentage of underlying mortgages currently delinquent
d. Any neighborhood restrictions on renting and about the strength of the regional rental market
e. The precedence of MBS investors in bankruptcy (i.e., would other lenders have a senior claim on the houses securing the mortgages?)
f. The condition of homes securing the underlying mortgages (e.g., would repairs be needed to sell or rent in the event of foreclosure?)
g. The creditworthiness of homeowners still current on their mortgages (i.e., how likely is it borrowers will be unable to make timely payments in the future?)
h. The percentage of pool mortgages with adjustable interest rates resetting soon (particularly in a rising rate environment because a reset means borrowers will face higher mortgage payments)

■ Solutions to Problems

P2-1. ***Transactions costs*** **(LG3)**

a. Bid/Ask Spread = Ask Price – Bid Price = $263,770 – $262,850 = $920

b. If Scottrade routes the buy order to the NYSE (a broker market), a market maker will execute the trade at the midpoint of the bid/ask spread. In this transaction, the market maker serves as broker, bringing your buy order together with someone else's sell order and forgoing the bid/ask spread, so total transactions cost is only the brokerage commission paid to Scottrade – $7.

c. If Scottrade routes the buy order to the NASDAQ (a dealer market), the market maker will execute the order from her own inventory and charge half the bid/ask spread. So total transactions costs will be (0.50 × $920) plus the $7 commission or $467.

d. The midpoint of the bid/ask spread is the implied market value of the stock, and the market value of the trade equals the product of the market value of the stock and the number of shares traded.

Midpoint of bid/ask spread = ($263,770 + $262,850) / 2 = $263,310

So, implied market value of the trade = $263,310 × 1 share = $263,310

P2-2. ***Transactions costs*** **(LG 3)**

a. Transactions costs = (Number of shares) × [(0.50) x (Bid/ask spread)] + Brokerage commission

$59.95 = [(1,200) × (0.50) × (Bid/ask spread)] + $29.95

Bid/ask spread = ($59.95 – $29.95) / 600 = $0.05

b. Twitter is listed on the NYSE, a broker market. So, had Charles Schwab routed the order to the NYSE, it could have been executed against a buy order, and total transaction costs would have been only the $29.95 brokerage commission. But transaction costs included half the bid/ask spread per share traded, so either (i) the order went to the NYSE, no public buy order was available, and the market maker bought the 1,200 shares for her inventory (at a cost of half the bid/ask spread per share) or (ii) Charles Schwab routed the order to a dealer market like NASDAQ, and a market maker added the shares to her inventory (at half the spread per share).

c. Transactions costs = (Number of shares) × [(0.50) × (Bid/ask spread)] + Brokerage commission

$47.95 = [(1,200) × (0.50) × (Bid/ask spread)] + $29.95

Bid/ask spread = ($47.95 – $29.95) / 600 = $0.03

d. Total transactions costs = Transactions costs from sale + Transactions costs from purchase

Total transactions costs = $59.95 + $47.95 = **$107. 90**

Costs could have been reduced costs by placing both trades online with a request for routing to the NYSE where the chance of crossing with other public orders is greatest. Had no market maker been necessary, total costs would have been only the $4.95 Schwab commission per trade.

P2-3. ***Initial public offerings*** **(LG 5)** 

a. Total proceeds = (IPO offer price) × (IPO shares issued) = $11 × 10.5 million = $115,500,000

b. Percentage underwriting discount = (Underwriting discount) / Offer price = $0.77/$11 = 7%

c. Underwriting fee ($) = ($0.77) × (10.5 million shares) = $8,085,000.
Or, (Percentage underwriting discount) × (Total proceeds) = (7%) × ($115,500,000) = $8,085,000

d. Net proceeds = Total proceeds – Underwriting fee = $115,500,000 – $8,085,000 = $107,415,000

e. IPO underpricing = [(Market price) – (Offer price)] / Offer price = [$13.41 – $11] / $11 = 21.9%

f. Market capitalization = (Market price of stock) × (Number of shares outstanding)
= ($13.41) × (85,489,470) = **$1,146,413,792.70**

P2-4. ***Initial public offerings*** **(LG5)**

a. Total proceeds = (IPO offer price) × (Number of IPO shares issued) = ($18) × (8.25 million) = $148,500,000

b. Underwriting fee ($) = (6.5%) × ($148,500,000) = $9,652,500

c. Net proceeds = Total proceeds – Underwriting fee = $148,500,000 – $9,652,500 = $138,847,500

d. Market capitalization = (Market price of stock) × (Number of shares outstanding) = ($16.10) × (31,025,936) = $499,517,569.6

e. IPO underpricing = [(Market price) – (Offer price)] / Offer price = [$16.10 – $18] / $18 = –10.56%

f. Negative underpricing indicates secondary-market investors are not willing to pay as much for existing shares as primary-market investors were for new shares – a rare case of primary-market investors losing money on IPO shares.

P2-5. ***Ethics problem*** **(LG 4)**

An ethical issue arises because of access to material nonpublic information and the potential conflict between an insider's duty to shareholders and concern for personal wealth. For example, suppose an insider knows about a planned acquisition and quietly buys shares of the target firm— a move likely to be lucrative because, on average, the stock price of targets jumps on news of an acquisition. In this example, the insider puts personal gain ahead of shareholder welfare. Other market participants might observe the insider's behavior and buy shares of the target firm as well— thereby boosting the target's share price and raising the cost of the acquisition.

■ Case

Case studies are available on www.pearson.com/mylab/finance.

Pros and Cons of Being Publicly Listed

a. Going public will enable Robo-Tech to raise more external capital without additional bankruptcy risk. [Unlike creditors, shareholders cannot take the firm to bankruptcy court if expected dividends are not paid.] Going public will also allow the company to continue operating after Mr. Bradley (the owner/CEO) retires or dies and, before then, insulate him from personal liability for Robo-Tech debts. Finally, going public will give Mr. Bradley a chance to sell personal shares to cash in on his work building the firm or diversify his wealth. [Currently, his human capital and financial wealth are both largely tied up Robo-Tech. After the IPO, Mr. Bradley could sell some Robo-Tech shares and invest in the stocks and bonds of companies in other industries.]

b. The disadvantages of going public include (i) more burdensome SEC reporting requirements, (ii) potential dilution of Mr. Bradley's managerial control (e.g., if the IPO left him with fewer than 50% of Robo-Tech shares, a takeover artist could purchase controlling interest and force his removal as CEO), and finally (iii) double taxation of Mr. Bradley's income (i.e., Robo-Tech will pay corporate income tax on firm profits, and Mr. Bradley will pay personal income tax on dividends/capital gains from company stock).

c. Robo-Tech is probably too small to meet NYSE and NASDAQ listing requirements. The firm will probably trade over-the-counter or on regional exchanges.

d. If the capital market is efficient, the price of Robo-Tech stock will provide an unbiased estimate of firm value. Efficiency also implies movements in stock price following news about the company will also be unbiased. Robo-Tech will, therefore, have an external real-time "report card" on management actions. For example, suppose extensive research led management to believe moving several U.S. plants to Latin America would create value for shareholders. If firm stock dipped on the announcement, other things equal, management would know the market did not share their enthusiasm.

■ Spreadsheet Exercise

Answers to Chapter 2's MuleSoft spreadsheet problem are available on www.pearson.com/mylab/finance.

■ Group Exercise

There is no group exercise for Chapter 2.

■ Integrative Case 1: Merit Enterprise Corp.

a. Option 1 is borrowing $4 billion from JPMorgan Chase (or a syndicate of banks). The pros are the benefits of not going public. Going public means costly SEC disclosure requirements and potentially less scope for current owners to run the company over the long run. [Indeed, if current owners found themselves with fewer than 50% of Merit shares after the IPO, an outsider could purchase controlling interest and remove them from management.] Finally, going public means subjecting current owners to higher taxes— they would face corporate-income tax on Merit profits as well as personal-income tax on dividends/capital gains from Merit stock. The cons of option 1 include the short-run loss of some control to JPMorganChase (or the syndicate). For example, bank lenders of such a large sum would insist on restrictive covenants to limit Merit's discretion in using the funds. And, if a loan payment were missed, bank lenders (unlike shareholders) could take the firm to bankruptcy court.

b. Option 2 is going public to raise the needed $4 billion. The pros are the benefits of going public: (i) access to more external capital over time, (ii) insulation of Merit owners from personal liability for firm debts, (iii) opportunities for Merit owners to sell some of their ownership stake to increase consumption or diversify wealth, (iv) extension of Merit's operating life beyond that of the current owners, and (v) greater flexibility in compensation (e.g., an IPO means Merit could use stock options) to attract more talented executives. The pros are the benefits of not ceding greater short-term control over firm decisions to bank lenders (see previous answer).

c. Ms. Lehn's should choose the option that maximizes the wealth of the current owners. The information provided suggests, at this point in the company's life, the benefits of going public exceed the costs. So Ms. Lehn should recommend an IPO to the board.

Ch. 2 Answers to Review Questions

2-1. Financial institutions are intermediaries that facilitate the flow of individual, business, and government savings into loans and investments. Broadly speaking, net savers (primarily individuals) prefer low risk and easy access to their money while net borrowers (businesses and government) would like to take risk with the funds and tie them up for a longer term. Financial institutions transform loans and investments into forms savers prefer to hold (such as deposits) or help net borrowers issue debt and equity instruments tailored to saver preferences.

2-2 Overall, the same entities that supply funds—individuals, businesses, and governments—also demand them, so these three groups are all financial-institution customers. That said, the key demanders of funds (net borrowers) are businesses and governments while the key suppliers (net savers) are individuals.

2-3 Commercial banks, investment banks, and the shadow-banking system are all financial institutions. Broadly speaking, commercial banks transform the deposits of net savers into loans to net borrowers. Investment banks, in contrast, do not "transform" the liquidity and riskiness of financial assets. Instead, they help "match" demanders and issuers of debt and equity instruments. Specifically, investment banks instruct companies on the best vehicles for raising capital, advise them on mergers/restructuring, and engage in trading and market-making to support their consulting function. Finally, the shadow-banking system performs services for net savers and borrowers similar to commercial banks—but without issuing deposits. By not relying on deposit funding, shadow banks can evade prudential regulation designed to constrain risk-taking by ordinary banks.

2-4. Financial markets facilitate direct interaction of suppliers and demanders of funds. In primary markets, debt and equity instruments are sold the first time—a direct exchange between the firm or government issuing securities and the purchasers. An example is Microsoft Corporation selling new shares of common stock to private investors. In secondary markets, previous issued securities are traded subsequent times; the original issuers receive no new funds. An example is an investor buying a share of outstanding Microsoft common stock from another investor through a broker. Put simply, primary markets feature sales of "new" securities while "used" security transactions take place in secondary markets. Primary and secondary markets have a symbiotic relationship—the easier the resale of a financial asset in a secondary market, the easier the initial sale of that asset in a primary market. Similarly, financial institutions and financial markets are far from independent. Commercial banks, for example, hold large inventories of U.S. Treasury securities to improve the liquidity and risk of their asset portfolio, and strong bank demand makes it easier for the Treasury to sell debt in the first place. Because banks have taken deposits and made loans since the days of goldsmiths in Medieval Europe, they enjoy a comparative advantage in originating and monitoring commercial loans. Aware of this advantage, the capital markets watch bank lending for clues about borrower financial strength. When a commercial bank announces a new loan to a publicly traded firm, that firm's stock price typically rises.

2-5 A private placement is the sale of a new security directly to an investor or a small group of sophisticated investors (such as insurance companies and pension funds). A public offering, in contrast, is the sale of newly issued stock or bonds to the public at large. Firms typically rely on public offerings when they need large sums.

2-6. The money market features trading in short-term, highly marketable debt instruments; "short term" here means an original maturity of one year or less. Money-market instruments typically carry low risk of capital losses. Examples of money-market instruments include U.S. Treasury bills, commercial paper, and negotiable certificates of deposit (issued by large commercial banks). The Eurocurrency market is the international analogue of the U.S. money market. This market features loans of currency held in banks outside the country where it is legal tender. Participants typically use the Eurocurrency market to evade domestic regulations and tax laws. The term stems from the European origin of this market; "Eurocurrency" has nothing to do with the euro *per se* and is no longer specific to Europe.

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2-12 Venture capitalists (VCs) are organized as (i) limited partnerships (most common), (ii) small business investment companies (SBICs), (iii) financial funds, and (iv) corporate funds. The principal difference is how the VC was created. The federal government charters SBICs. Financial institutions (usually commercial banks), in contrast, create financial funds as subsidiaries while nonfinancial firms launch corporate funds, sometimes as subsidiaries. Unlike other VC types, limited partnerships are launched by private individuals. All VCs use a legal agreement to specify deal structure and pricing. Deal structure allocates responsibilities between the start-up and VC and may include constraints on the firm to enhance its chance of success and mitigate VC risk. Pricing depends on the (i) value of the start-up, (ii) perceived risk of its business operations, and (iii) amount of funding needed. In general, VCs provide less funding and require a greater ownership stake when the firm is the early stages of development.

2-13 Firms wishing to go public must (i) secure approval from current shareholders, (ii) obtain certification of the accuracy of their financial documents from company auditors and lawyers, (iii) hire an originating investment bank, (iv) file a registration statement with the Securities and Exchange Commission (SEC), (v) participate in roadshows with the investment bank to spark interest among potential investors and learn about a suitable issuing price, (vi) obtain final SEC approval after the investment bank has finalized issue terms and offer price, and (vii) sell the issue to the investment bank at the guarantee price. The investment bank will then assume the risk of placing the issue with primary-market investors.

2-14 Broadly speaking, an investment bank facilitates a firm's issuance of new securities. In a common-stock issue, the bank helps the issuer file a registration statement with the SEC and market the offering to potential investors in a roadshow. The bank also sets the offering price and other terms of the issue. All along the way, the originating investment bank provides advice to help the issuer maximize the volume of funds raised. Finally, the originating bank buys the new securities from the issuer at the guarantee price and then resells the issue to primary-market investors. Sometimes the bank will form a syndicate of other investment banks to share the financial risk of placing the issue.

2-15 Securitization is the process of creating highly liquid marketable securities out of illiquid assets. The first assets securitized on a large scale were residential mortgages—securitizers "pooled" the mortgages and then issued debt claims backed by cash flows from those pools. In other words, the interest and principal on "mortgage-backed" securities (MBSs) paid to investors came from mortgage payments by residential homeowners. Securitization facilitated investment in mortgages by unbundling risk. Lenders might need their funds before the mortgage is repaid or lose money if the homeowner defaults. Securitization allows mortgage originators to earn fees from making the loans but then reduce liquidity and credit risk by selling the mortgage to a securitizer (who, in turn, creates a security with cash flows tailored to the preferences of market investors). Securitizing mortgages promotes efficient risk sharing, which in turn, makes the real-estate sector a more attractive place to invest.

2-16 A mortgage-backed security (MBS) is a debt instrument backed by residential mortgages. "Backed" means principal and interest paid to MBS investors come from payments by residential homeowners with mortgages in the underlying pool. The primary MBS risk is credit risk, the chance homeowners will not make monthly principal and interest payments as stipulated in their mortgage contracts.

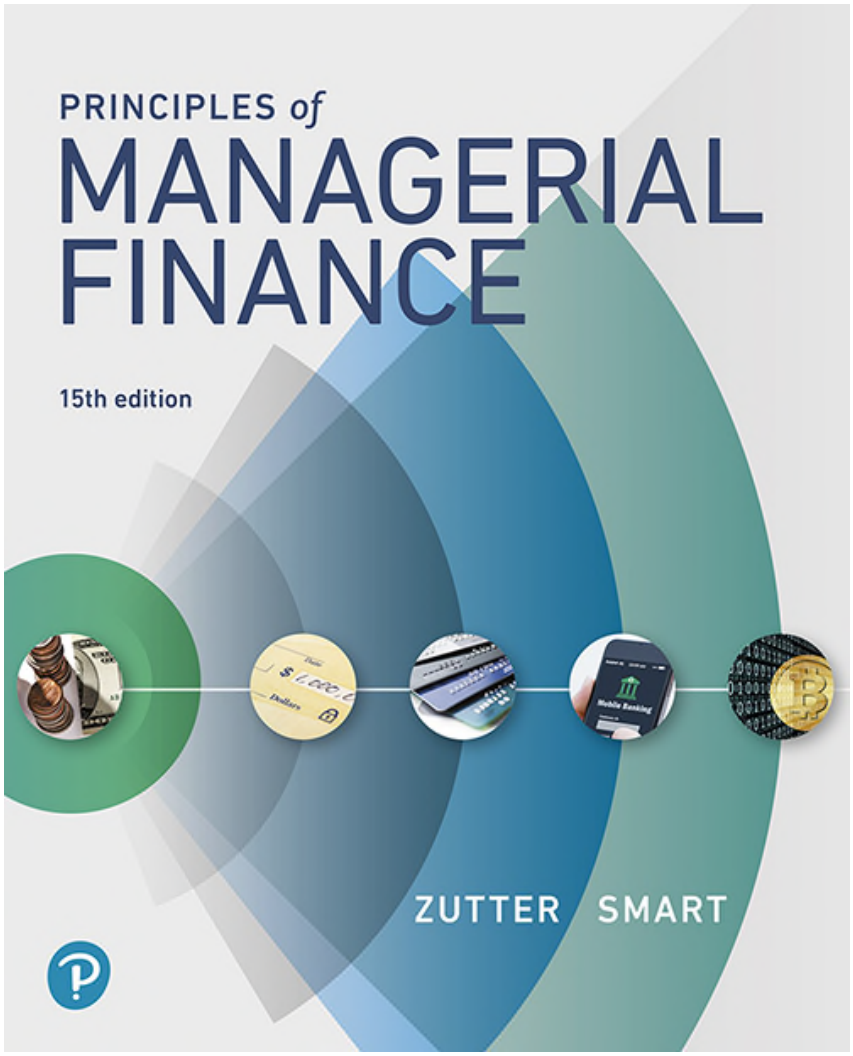
2-17 When a home buyer takes out a mortgage, initial equity—the difference between purchase price and mortgage-loan balance—is simply the down payment. Over time, equity will rise as the borrower reduces the mortgage balance with monthly principal and interest payments. Should housing prices rise, the gap between house value and mortgage balance will widen further—that is to say, home equity rises even faster. If a borrower needs to skip a mortgage payment, the lender will typically allow her to tap equity. Rising prices also imply a vibrant housing market, so a borrower permanently unable to make the monthly payments can easily sell her home to pay off the mortgage.

2-18. A large decline in housing prices could push the value of a borrower's home below the mortgage balance. With negative equity, the borrower could hold the loss at the original down payment by allowing the lender to foreclose. The only cost would be the negative impact on the borrower's credit score. But if the decline in housing prices has led many other homeowners to walk away from their mortgages, this borrower may not be too concerned about the blot on her credit report, thinking future lenders will understand the circumstances.

2-19 The Great Recession of 2007–09 illustrates how a financial-sector crisis can metastasize. In the years running up to the recession, securitizers increasingly pooled mortgage loans to borrowers with less-than-stellar credit. At the time, "subprime" loans seemed relatively low risk because of rapidly rising housing prices. Then, when home prices began to level off (and even dip in some markets), mortgage delinquencies and defaults started climbing. With payments on underlying mortgages falling, the value of mortgage-back securities (MBSs) began to fall as well. Large investment banks (like Lehmann Brothers) and commercial banks (like Citibank) held considerable inventories of now-problematic MBSs. To offset rising MBS losses, commercial banks sharply curbed lending, which produced an economy-wide decline in consumer and investment spending. Investment banks, meanwhile, were large players in the money market—Lehmann, for example, routinely sold a large amount of commercial paper (short-term unsecured corporate debt). When the firm collapsed almost overnight (rendering its commercial paper worthless), the money market froze as investors became wary of all unsecured debt. Now, nonfinancial companies that regularly tapped the money market for short-term funding found themselves in squeeze. They responded by slashing costs and hoarding cash, which put even more downward pressure on economy-wide consumer and investment spending.

Principles of Managerial Finance

Fifteenth Edition



Chapter 2

The Financial Market Environment

Learning Goals (1 of 2)

LG 1 Understand the role that financial institutions play in managerial finance.

LG 2 Understand the role that financial markets play in managerial finance.

LG 3 Describe the differences between the money market and the capital market.

LG 4 Understand the major regulations and regulatory bodies that affect financial institutions and markets.

Learning Goals (2 of 2)

LG 5 Describe the process of issuing common stock, including venture capital, going public, and the role of the investment bank.

LG 6 Understand what is meant by financial markets in crisis, and describe some of the root causes of the Great Recession.

2.1 Financial Institutions (1 of 2)

- Financial institutions are **intermediaries** that channel the savings of individuals, businesses, and governments into loans or investments.
- The key suppliers and demanders of funds are individuals, businesses, and governments.
- In general, individuals are net suppliers of funds, while businesses and governments are net demanders of funds.

2.1 Financial Institutions (2 of 2)

- Commercial Banks, Investment Banks, and the Shadow Banking System
  - Commercial Banks
    - Institutions that provide savers with a secure place to invest their funds offer loans to individual and business borrowers
  - Investment Banks
    - Assist companies in raising capital advise firms on major transactions such as mergers or financial restructurings and engage in trading and market making activities
  - Shadow Banking System
    - A group of institutions that engage in lending activities, much like traditional banks, but that do not accept deposits and therefore are not subject to the same regulations as traditional banks

Matter of Fact

Consolidation in the U.S. Banking Industry

The U.S. banking industry has been going through a long period of consolidation. According to the Federal Deposit Insurance Corporation (FDIC), the number of commercial banks in the United States declined from 14,400 in early 1984 to 4,964 by October 2017, a decline of more than 65%. The decline is concentrated among small community banks, which larger institutions have been acquiring at a rapid pace.

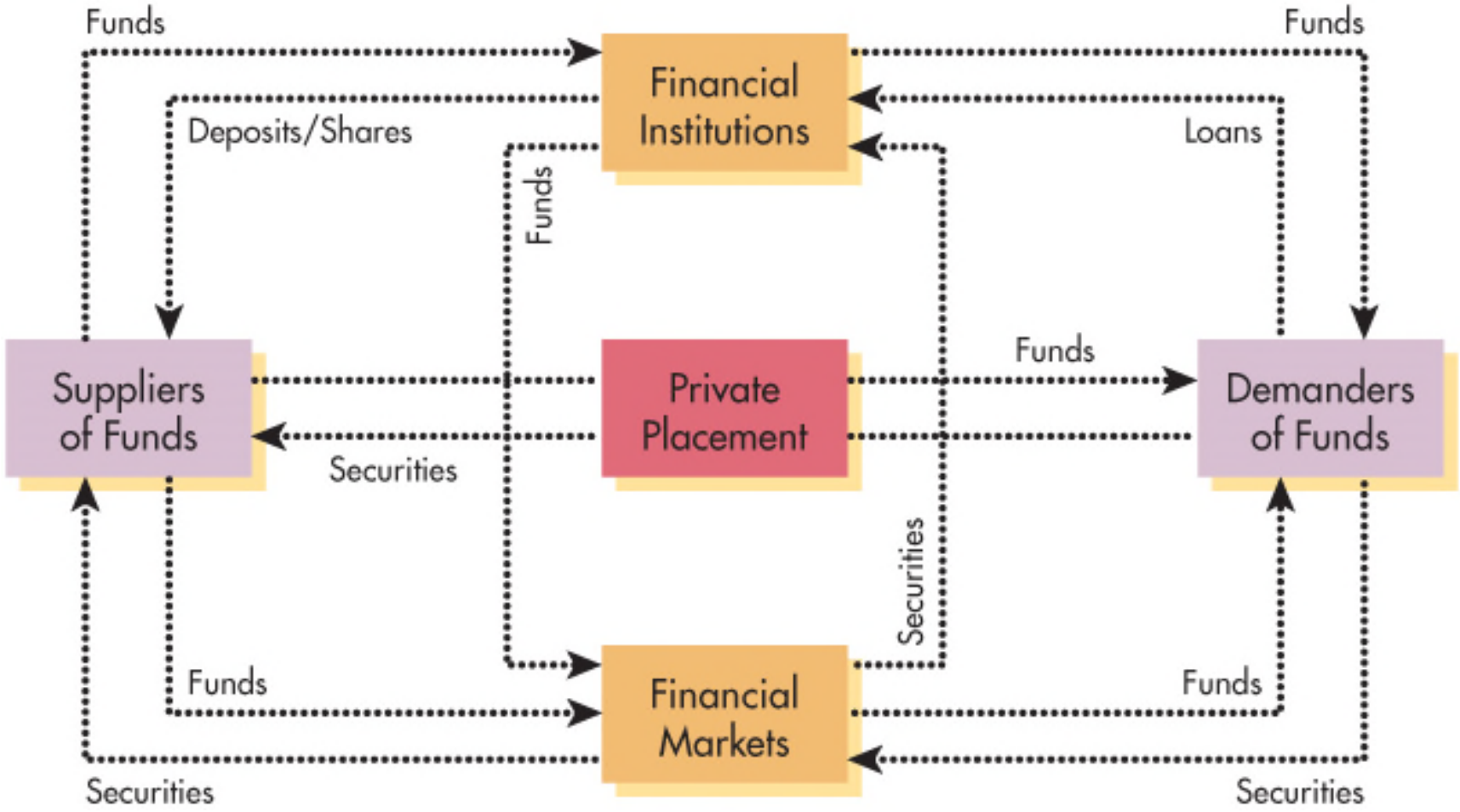
2.2 Financial Markets (1 of 12)

- The Relationship Between Institutions and Markets
  - **Financial markets** are forums in which suppliers of funds and demanders of funds can transact business directly
  - Transactions in short-term marketable securities take place in the money market while transactions in long-term securities take place in the capital market
  - A **private placement** involves the sale of a new security directly to an investor or group of investors
  - Most firms, however, raise money through a **public offering** of securities, which is the sale of either bonds or stocks to the general public

2.2 Financial Markets (2 of 12)

- The Relationship Between Institutions and Markets
  - The **primary market** is the financial market in which securities are initially issued; the only market in which the issuer is directly involved in the transaction
  - **Secondary markets** are financial markets in which preowned securities (those that are not new issues) are traded

Figure 2.1 Flow of Funds



2.2 Financial Markets (3 of 12)

- The Money Market
  - A market where investors trade highly liquid securities with maturities of 1 year or less
  - Most money market transactions are made in **marketable securities** which are short-term debt instruments, such as:
    - U.S. Treasury bills issues by the federal government
    - Commercial paper issued by businesses
    - Negotiable certificates of deposit issued by financial institutions
  - Investors generally consider marketable securities to be among the least risky investments available.

2.2 Financial Markets (4 of 12)

- The Money Market
  - Eurocurrency Market
    - International equivalent of the domestic money market
    - It is a market for short-term bank deposits denominated in U.S. dollars or other marketable currencies
    - The Eurocurrency market has grown rapidly mainly because it is unregulated and because it meets the needs of international borrowers and lenders
    - Nearly all Eurodollar deposits are time deposits

2.2 Financial Markets (5 of 12)

- The Capital Market
  - A market that enables suppliers and demanders of long-term funds to make transactions
  - Key Securities Traded: Bonds and Stocks
    - Securities traded in the capital market fall into two broad categories: debt and equity
    - Bonds
      - Long-term debt instruments used by businesses and government to raise large sums of money, generally from a diverse group of lenders

2.2 Financial Markets (6 of 12)

- The Capital Market
  - Key Securities Traded: Bonds and Stocks
    - Common Stock
      - Units of ownership interest or equity in a corporation
    - Preferred Stock
      - A special form of ownership that has features of both a bond and common stock

2.2 Financial Markets (7 of 12)

- The Capital Market
  - Broker Markets and Dealer Markets
    - Securities Exchanges
      - Organizations that provide the marketplace in which firms can raise funds through the sale of new securities and in which purchasers can resell securities
    - Broker Markets
      - Securities exchanges in which the two sides of a transaction, the buyer and the seller, are brought together to trade securities
      - Trading takes place on centralized trading floors of national exchanges, such as NYSE Euronext, as well as regional exchanges

2.2 Financial Markets (8 of 12)

- The Capital Market
  - Broker Markets and Dealer Markets
    - Dealer Markets
      - Markets, like the NASDAQ, in which the buyer and seller are not brought together directly but instead have their orders executed by securities dealers that “make markets” in the given security
      - The dealer market has no centralized trading floors
        - It is made up of a large number of market makers who are linked together via a mass-telecommunications network

2.2 Financial Markets (9 of 12)

- The Capital Market
  - Broker Markets and Dealer Markets
    - Dealer Markets
      - As compensation for executing orders, market makers make money on the bid/ask spread (ask price – bid price)
        - Ask Price: The lowest price a seller is willing to accept for a security
        - Bid Price: The highest price a buyer is willing to pay for a security

Example 2.1

Mark instructs his broker to submit a market order to buy 100 shares of Facebook common stock. At the time, the ask price for Facebook is $138.79, and the bid price is $138.71. Remember, the ask price is the lowest price offered in the market to sell Facebook to a potential buyer. Since Mark is trying to buy Facebook stock, and he wants to buy at the lowest possible price, he will pay $138.79, plus whatever commissions his broker charges. If, however, Mark already owned Facebook stock and wanted to sell it, he would be looking for the market's best offer to buy, the bid price. In that case, Mark would sell his shares for $138.71, less commissions charged by the broker.

Personal Finance Example 2.2 (1 of 3)

Assume that the current bid price for Merck & Co. stock is $63.25 and the ask price is $63.45. Suppose you have an E*TRADE brokerage account that charges a $6.95 commission for online equity trades. What is the current bid/ask spread for Merck?

$$\text{Bid/Ask Spread} = \text{Ask Price} - \text{Bid Price} \qquad (2.1)$$

$$\text{Bid/Ask Spread} = \$63.45 - \$63.25 = \$0.20$$

Personal Finance Example 2.2 (2 of 3)

Inserting the current bid and ask prices into Equation 2.1, you find that the bid/ask spread for Merck is $0.20. What would your total transaction costs be if you purchased 100 shares of Merck by submitting a market order via your E*TRADE account? Assume the trade is sent to a broker market for execution, and the market maker matches your order with a 100-share sell order for Merck from another investor. In this case your order will be executed at the midpoint of the bid/ask spread ($63.35), so you will pay only the brokerage commission.

$$\text{Total Transaction Costs} = \text{Brokerage Commission} = \$6.95$$

Personal Finance Example 2.2 (3 of 3)

Now what would your total transaction costs be if you purchased 100 shares of Merck by submitting a market order via your E*TRADE account, and it is routed to a dealer market for execution?

$$\begin{aligned}\text{Total Transaction Costs} &= \left(\text{Number of Shares} \times 1/2 \text{ the Bid/Ask Spread}\right) \\ &\quad + \text{Brokerage Commission} \\ &= \left(100 \times 1/2 \times \$0.20\right) + \$6.95 \\ &= \$10 + \$6.95 = \$16.95\end{aligned}$$

Depending on where your brokerage routes your order, you find that your total transaction costs are either $6.95 in a broker market or $16.95 in a dealer market.

2.2 Financial Markets (10 of 12)

- The Capital Market
  - International Capital Markets
    - Eurobond Market
      - The market where corporations and governments typically issue bonds denominated in dollars and sell them to investors located outside the United States.
    - Foreign Bond Market
      - A market for bonds issued by a foreign corporation or government that is denominated in the investor's home currency and sold in the investor's home market
    - International Equity Market
      - Allows corporations to sell blocks of shares to investors in a number of different countries simultaneously

2.2 Financial Markets (11 of 12)

- The Role of Capital Markets
  - The Efficient-Market Hypothesis
    - Securities are typically in equilibrium, which means they are fairly priced and their expected returns equal their required returns
    - At any point in time, security prices fully reflect all information available about the firm and its securities, and these prices react swiftly to new information
    - Because stocks are fully and fairly priced, investors need not waste their time trying to find mispriced (undervalued or overvalued) securities

2.2 Financial Markets (12 of 12)

- The Role of Capital Markets
  - Behavioral Finance
    - Argues that stock prices and prices of other securities can deviate from their true values for extended periods and that these deviations may lead to predictable patterns in stock prices

2.3 Regulation of Financial Markets and Institutions (1 of 4)

- Regulations Governing Financial Institutions
  - Glass-Steagall Act
    - Prohibited institutions that took deposits from engaging in activities such as securities underwriting and trading, thereby effectively separating commercial banks from investment banks
  - Federal Deposit Insurance Corporation (FDIC)
    - An agency created by the Glass-Steagall Act that provides insurance for deposits at banks and monitors banks to ensure their safety and soundness

2.3 Regulation of Financial Markets and Institutions (2 of 4)

- Regulations Governing Financial Institutions
  - Gramm-Leach-Bliley Act
    - Allows mergers between commercial banks, investment banks, and insurance companies and thus permits these institutions to compete in markets that prior regulations prohibited them from entering
  - Dodd-Frank Wall Street Reform and Consumer Protection Act
    - Realigns the duties of several existing agencies and requires existing and new agencies to report to Congress regularly
    - Nearly a decade after Dodd-Frank became law, the various agencies affected or created by the new law were still writing rules specifying how the new law's provisions would be implemented

2.3 Regulation of Financial Markets and Institutions (3 of 4)

- Regulations Governing Financial Markets
  - Securities Act of 1933
    - Regulates the sale of securities to the public via the primary market
    - Requires sellers of new securities to provide extensive disclosures to the potential buyers of those securities
  - Securities Exchange Act of 1934
    - Regulates the trading of securities in the secondary market
    - Created the Securities Exchange Commission
    - Requires ongoing disclosure by companies whose securities trade in secondary markets (e.g., 10-Q, 10-K)
    - Imposes limits on the extent to which “insiders” can trade in their firm’s securities

2.3 Regulation of Financial Markets and Institutions (4 of 4)

- Regulations Governing Financial Markets
  - Securities and Exchange Commission
    - The primary government agency responsible for enforcing federal securities laws

2.4 The Securities Issuing Process (1 of 12)

- Issuing Common Stock
  - Private Equity
    - External equity financing that is raised via a private placement, typically by private early-stage firms with attractive growth prospects
    - Angel Investors (Angels)
      - Wealthy individual investors who make their own investment decisions and are willing to invest in promising startups in exchange for a portion of the firm's equity

2.4 The Securities Issuing Process (2 of 12)

- Issuing Common Stock
  - Private Equity
    - Venture Capitalists (VCs)
      - Formal business entities that take in private equity capital from many individual investors, often institutional investors such as endowments and pension funds or individuals of high net worth, and make private equity investment decisions on their behalf
  - Organization and Investment Stages
    - VC Limited Partnership is the most common structure

2.4 The Securities Issuing Process (3 of 12)

- Issuing Common Stock
  - Deal Structure and Pricing
    - The deal structure allocates responsibilities and ownership interests between the existing owners (typically the founders) and the venture capitalist, and its terms depend on numerous factors related to the founders; the business structure, stage of development, and outlook; and other market and timing issues
    - Venture capitalists will require more equity ownership and pay less for it the riskier and less developed the business

Table 2.1 Organization of Venture Capital Investors

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

2.4 The Securities Issuing Process (4 of 12)

- Issuing Common Stock
  - Going Public
    - Private Placement
      - The firm sells new securities directly to an investor or group of investors
    - Rights Offering
      - The firm sells new shares to existing stockholders
    - Public Offering
      - The firm sells new shares to the general public

2.4 The Securities Issuing Process (5 of 12)

- Issuing Common Stock
  - Going Public
    - Initial Public Offering (IPO)
      - The first public sale of a firm's stock, typically made by small, rapidly growing companies that either require additional capital to continue growing or have met a milestone for going public that was established in an earlier agreement to obtain VC funding
    - Prospectus
      - A portion of a security registration statement that describes the key aspects of the issue, the issuer, and its management and financial position

2.4 The Securities Issuing Process (6 of 12)

- Issuing Common Stock
  - Going Public
    - Red Herring
      - A preliminary prospectus made available to prospective investors during the waiting period between the registration statement's filing with the SEC and its approval
    - Quiet Period
      - Period during which the law places restrictions on what company officials may say about the company

2.4 The Securities Issuing Process (7 of 12)

- Issuing Common Stock
  - Going Public
    - Roadshow
      - A series of presentations to potential investors around the country, providing investors with information about the new issue
      - Sessions help investment banks gauge demand for the offering and set a preliminary offer price range

Figure 2.2 Cover of a Preliminary Prospectus for a Stock Issue

The information in this preliminary prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell nor does it seek an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

PROSPECTUS (Subject to Completion)
Dated February 24, 2017

200,000,000 Shares

Snap Inc.

Class A Common Stock

This is an initial public offering of shares of non-voting Class A common stock of Snap Inc.

Snap Inc. is offering to sell 145,000,000 shares of Class A common stock in this offering. The selling stockholders identified in this prospectus are offering an additional 55,000,000 shares of Class A common stock. We will not receive any of the proceeds from the sale of the shares being sold by the selling stockholders.

We have three classes of common stock: Class A common stock, Class B common stock, and Class C common stock. The rights of the holders of Class A common stock, Class B common stock, and Class C common stock are identical, except with respect to voting, conversion, and transfer rights. Class A common stock is non-voting. Anyone purchasing Class A common stock in this offering will therefore not be entitled to any votes. Each share of Class B common stock is entitled to one vote and is convertible into one share of Class A common stock. Each share of Class C common stock is entitled to ten votes and is convertible into one share of Class B common stock. The Class C common stock, which is held by our founders, each of whom is an executive officer and a director of the company, will represent approximately 88.5% of the voting power of our outstanding capital stock following this offering.

Before this offering, there has been no public market for our Class A common stock. It is currently estimated that the initial public offering price will be between $14.00 and $16.00 per share. Our Class A common stock has been approved for listing on the New York Stock Exchange under the symbol "SNAP."

We are an "emerging growth company" under the Jumpstart Our Business Startups Act of 2012, have elected to comply with reduced public company reporting requirements, and may elect to comply with reduced public company reporting requirements in future filings.

See "Risk Factors" beginning on page 15 to read about factors you should consider before buying our Class A common stock.

	Price to Public	Underwriting Discounts and Commissions (1)	Proceeds to Snap Inc.	Proceeds to Selling Stockholders
Per share	$	$	$	$
Total	$	$	$	$

(1) See "Underwriting" for a description of the compensation payable to the underwriters.

At our request, the underwriters have reserved up to 7.0% of the shares of Class A common stock offered by this prospectus for sale, at the initial public offering price, to certain institutions as well as individuals associated with us. See "Underwriting—Directed Share Program."

To the extent that the underwriters sell more than 200,000,000 shares of Class A common stock, the underwriters have the option to purchase up to an additional 30,000,000 shares of Class A common stock from us and certain of the selling stockholders at the initial public offering price less the underwriting discount.

The Securities and Exchange Commission and state securities regulators have not approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The underwriters expect to deliver the shares against payment in New York, New York on , 2017.

Morgan Stanley *Goldman, Sachs & Co.* *J. P. Morgan* *Deutsche Bank Securities*
Barclays *Credit Suisse* *Allen & Company LLC*

Prospectus dated , 2017

Source: From SEC filing Form S-1/A, Copyright © U.S. Securities and Exchange Commission.

2.4 The Securities Issuing Process (8 of 12)

- Issuing Common Stock
  - The Investment Bank's Role
    - Investment Bank
      - Financial intermediary that specializes in selling new security issues and advising firms with regard to major financial transactions
    - Underwriting
      - The role of the investment bank in bearing the risk of reselling, at a profit, the securities purchased from an issuing corporation at an agreed-on price
    - IPO Offer Price
      - The price at which the issuing firm sells its securities

2.4 The Securities Issuing Process (9 of 12)

- Issuing Common Stock
  - The Investment Bank's Role
    - Originating Investment Bank
      - The investment bank initially hired by the issuing firm, it brings other investment banks in as partners to form an underwriting syndicate
    - Underwriting Syndicate
      - A group of other banks formed by the originating investment bank to share the financial risk associated with underwriting new securities

2.4 The Securities Issuing Process (10 of 12)

- Issuing Common Stock
  - The Investment Bank's Role
    - Tombstone
      - The list of underwriting syndicate banks, presented in such a way to indicate a syndicate member's level of involvement, located at the bottom of the IPO prospectus cover page
    - Selling Group
      - A large number of brokerage firms that join the originating investment bank(s); each accepts responsibility for selling a certain portion of a new security issue on a commission basis

Figure 2.3 The Selling Process for a Large Security Issue

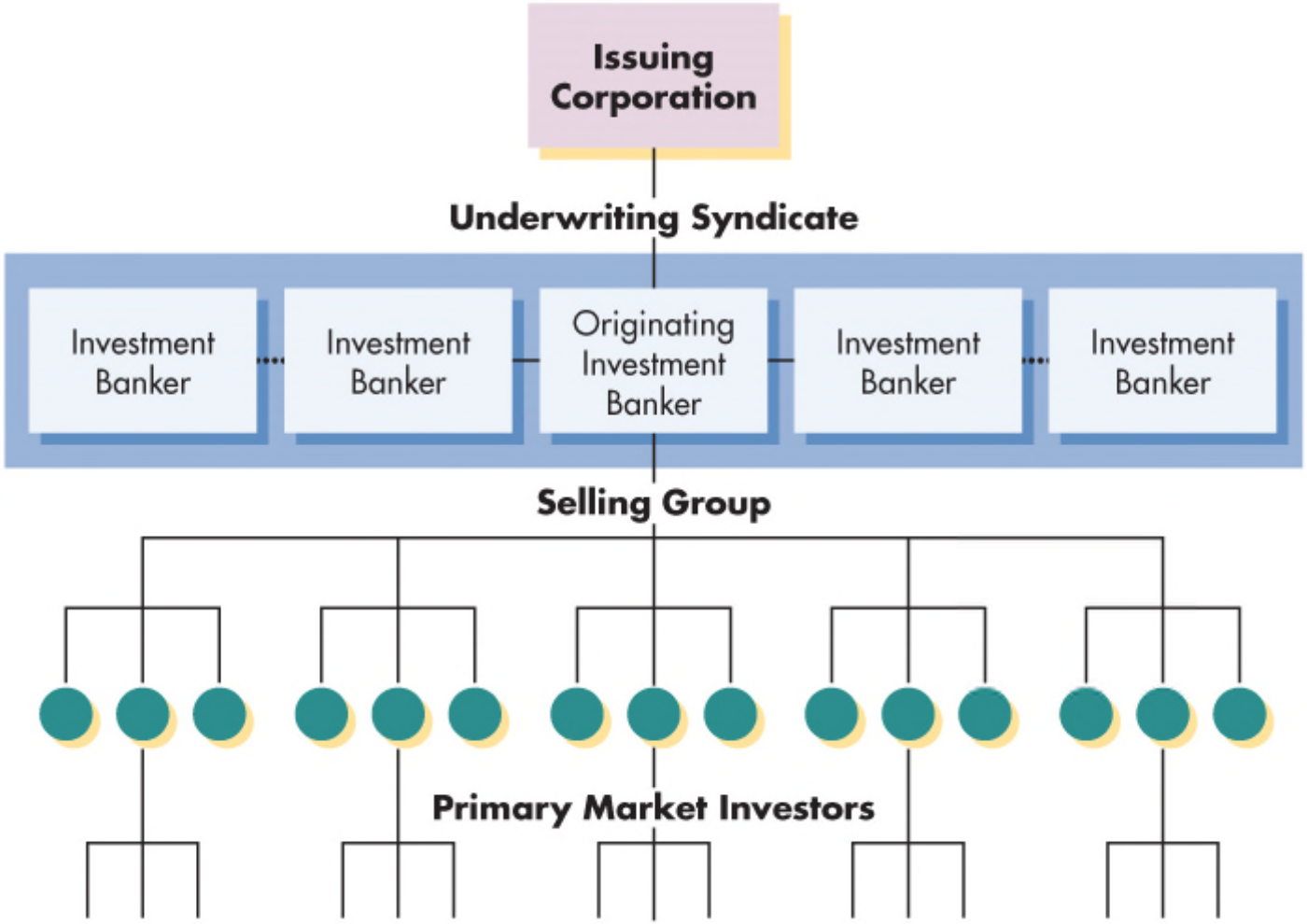


Figure 2.4 Cover of a Final Prospectus for a Stock Issue

Filed Pursuant to Rule 424(b)(4)
Registration No. 333-215866

PROSPECTUS

200,000,000 Shares

Snap Inc.

Class A Common Stock

This is an initial public offering of shares of non-voting Class A common stock of Snap Inc.

Snap Inc. is offering to sell 145,000,000 shares of Class A common stock in this offering. The selling stockholders identified in this prospectus are offering an additional 55,000,000 shares of Class A common stock. We will not receive any of the proceeds from the sale of the shares being sold by the selling stockholders.

We have three classes of common stock: Class A common stock, Class B common stock, and Class C common stock. The rights of the holders of Class A common stock, Class B common stock, and Class C common stock are identical, except with respect to voting, conversion, and transfer rights. Class A common stock is non-voting. Anyone purchasing Class A common stock in this offering will therefore not be entitled to any votes. Each share of Class B common stock is entitled to one vote and is convertible into one share of Class A common stock. Each share of Class C common stock is entitled to ten votes and is convertible into one share of Class B common stock. The Class C common stock, which is held by our founders, each of whom is an executive officer and a director of the company, will represent approximately 88.5% of the voting power of our outstanding capital stock following this offering.

Before this offering, there has been no public market for our Class A common stock. The initial public offering price is $17.00 per share. Our Class A common stock has been approved for listing on the New York Stock Exchange under the symbol "SNAP."

We are an "emerging growth company" under the Jumpstart Our Business Startups Act of 2012, have elected to comply with reduced public company reporting requirements, and may elect to comply with reduced public company reporting requirements in future filings.

See "Risk Factors" beginning on page 15 to read about factors you should consider before buying our Class A common stock.

	Price to Public	Underwriting Discounts and Commissions (1)	Proceeds to Snap Inc.	Proceeds to Selling Stockholders
Per share	*$17.00*	*$0.425*	*$16.575*	*$16.575*
Total	*$3,400,000,000.00*	*$85,000,000.00*	*$2,403,375,000.00*	*$911,625,000.00*

(1) See "Underwriting" for a description of the compensation payable to the underwriters.

At our request, the underwriters have reserved up to 7.0% of the shares of Class A common stock offered by this prospectus for sale, at the initial public offering price, to certain institutions as well as individuals associated with us. See "Underwriting—Directed Share Program."

To the extent that the underwriters sell more than 200,000,000 shares of Class A common stock, the underwriters have the option to purchase up to an additional 30,000,000 shares of Class A common stock from us and certain of the selling stockholders at the initial public offering price less the underwriting discount.

The Securities and Exchange Commission and state securities regulators have not approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The underwriters expect to deliver the shares against payment in New York, New York on March 7, 2017.

Morgan Stanley *Goldman, Sachs & Co.* *J. P. Morgan* *Deutsche Bank Securities*

Barclays *Credit Suisse* *Allen & Company LLC*

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2.4 The Securities Issuing Process (11 of 12)

- Issuing Common Stock
  - The Investment Bank's Role
    - Total Proceeds
      - The total amount of proceeds for all shares sold in the IPO
      - Total Proceeds = (IPO Offer Price × # of IPO Shares Issued)
    - Market Price
      - The price of the firm's shares as determined by the interaction of buyers and sellers in the secondary market
    - Market Capitalization
      - The total market value of a publicly traded firm's outstanding stock
      - Market Capitalization = (Market Price of Stock × # of Shares of Stock Outstanding)

2.4 The Securities Issuing Process (12 of 12)

- Issuing Common Stock
  - The Investment Bank's Role
    - IPO Market Price
      - The final trading price on the first day in the secondary market
    - IPO Underpricing
      - The percentage change from the final IPO offer price to the IPO market price, which is the final trading price on the first day in the secondary market; this is also called the IPO initial return
      - IPO Underpricing = (Market Price − Offer Price) ÷ Offer Price

Example 2.3 (1 of 2)

With baby boomers retiring and hitting the open roads of America in droves, the largest U.S. recreational vehicle dealer, Camping World, decided it was time to go public. Its IPO took place on October 7, 2016, at which time the company sold 11.4 million shares at an IPO offer price of $22 per share. Checking prices for Camping World on Yahoo! Finance, you can find that the IPO market price at the close of secondary market trading on October 7 was $22.50. With this information you can calculate the IPO underpricing using Equation 2.4.

$$\text{IPO Underpricing} = \left(\text{Market Price} - \text{Offer Price}\right) \div \text{Offer Price} \qquad (2.4)$$

$$= \left(\$22.50 - \$22\right) \div \$22 = 0.0227 \text{ or } 2.27\%$$

Example 2.3 (2 of 2)

Camping World's IPO underpricing of 2.27% is considerably less than the 44% underpricing for Snap Inc. This demonstrates another interesting fact about IPOs, specifically, that the degree to which IPOs are underpriced varies tremendously from one deal to another and one time to another. Usually, smaller IPOs are underpriced more than larger ones, but that was not the case here. Camping World raised $250.8 million in its offering, which is a small fraction of the $3.4 billion raised in Snap's IPO.

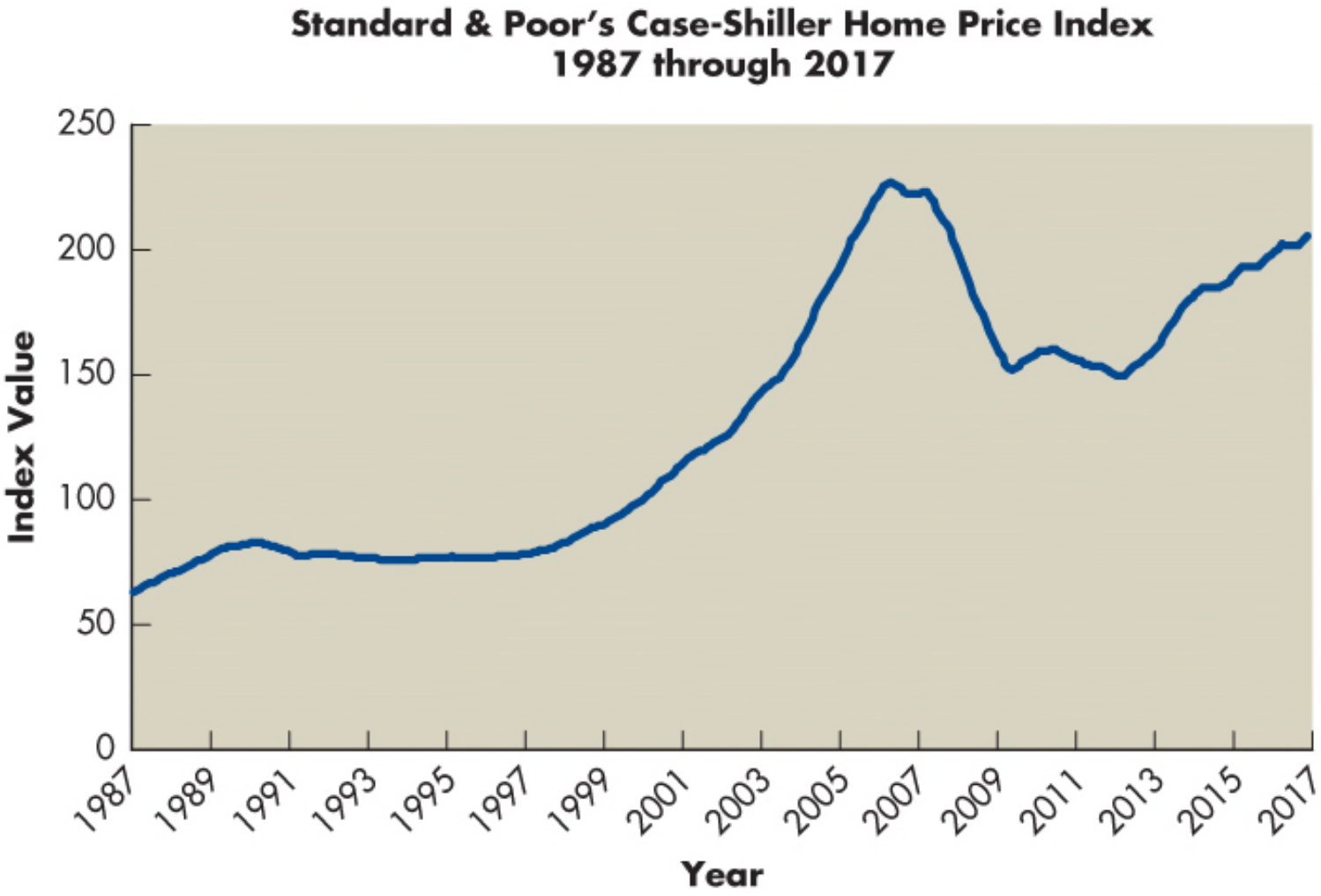
2.5 Financial Markets in Crisis (1 of 4)

- Financial Institutions and Real Estate Finance
  - Securitization
    - The process of pooling mortgages or other types of loans and then selling claims or securities against that pool in the secondary market
  - Mortgage-Backed Securities
    - Securities that represent claims on the cash flows generated by a pool of mortgages
    - A primary risk associated with mortgage-backed securities is that homeowners may not be able to, or may choose not to, repay their loans

2.5 Financial Markets in Crisis (2 of 4)

- Financial Institutions and Real Estate Finance
  - Falling Home Prices and Delinquent Mortgages
    - Rising home prices between 1987 and 2006 kept mortgage default rates low
    - Lenders relaxed standards for borrowers and created subprime mortgages
    - As housing prices fell from 2006 to 2009, many borrowers had trouble making payments, but were unable to refinance
    - As a result, there was a sharp increase in the number of delinquencies and foreclosures
    - Subprime Mortgages
      - Mortgage loans made to borrowers with lower incomes and poorer credit histories as compared to “prime” borrowers

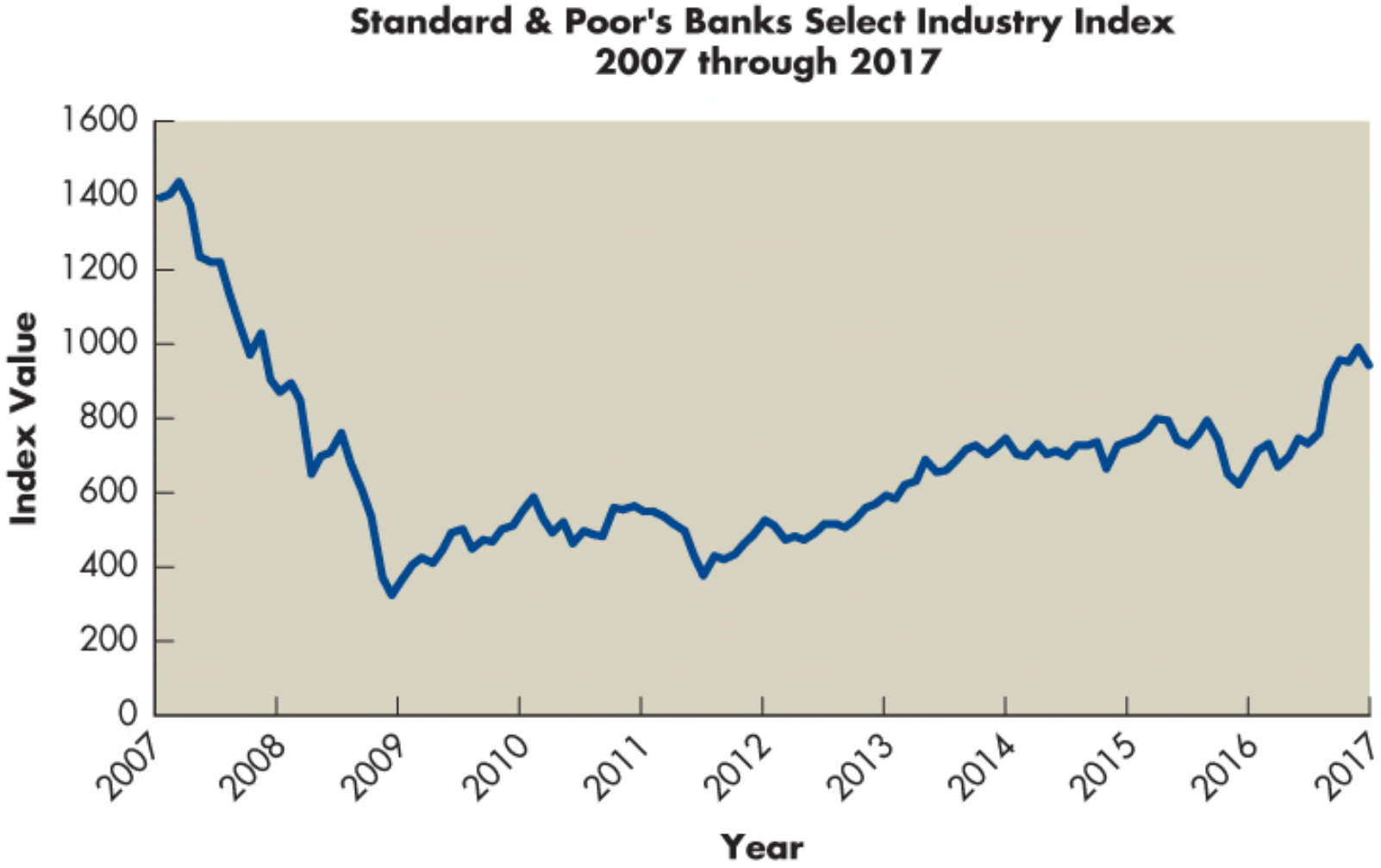
Figure 2.5 House Prices Soar and Then Crash



2.5 Financial Markets in Crisis (3 of 4)

- Financial Institutions and Real Estate Finance
  - Crisis of Confidence in Banks
    - With delinquency rates rising, the value of mortgage-backed securities began to fall and so did the fortunes of financial institutions that had invested heavily in real estate assets
    - Only 3 banks failed in 2007, but 25 failed in 2008, 140 failed in 2009, peaking at 157 bank failures in 2010
    - It was not until 2015 that bank failures fell back into the single digits

Figure 2.6 Bank Stocks Plummet During Financial Crisis



2.5 Financial Markets in Crisis (4 of 4)

- Spillover Effects and Recovery from the Great Recession
  - As banks came under intense financial pressure in 2008, they tightened their lending standards and dramatically reduced the quantity of loans they made
  - Corporations found that they could no longer raise money in the money market, or could only do so at extraordinarily high rates
  - As a consequence, businesses began to hoard cash and cut back on expenditures, and economic activity contracted

Review of Learning Goals (1 of 10)

- **LG 1**
  - Understand the role that financial institutions play in managerial finance.
    - Financial institutions bring net suppliers of funds and net demanders together to help translate the savings of individuals, businesses, and governments into loans and other types of investments
    - The net suppliers of funds are generally individuals or households who save more money than they borrow
    - Businesses and governments are generally net demanders of funds, meaning they borrow more money than they save

Review of Learning Goals (2 of 10)

- **LG 2**
  - Understand the role that financial markets play in managerial finance.
    - Like financial institutions, financial markets help businesses raise the external financing they need to fund new investments for growth
    - Financial markets provide a forum in which savers and borrowers can transact business directly
    - Businesses and governments issue debt and equity securities directly to the public in the primary market
    - Subsequent trading of these securities between investors occurs in the secondary market

Review of Learning Goals (3 of 10)

- **LG 3**
  - Describe the differences between the money market and the capital market.
    - In the money market, savers who want a temporary place to deposit funds where they can earn interest interact with borrowers who have a short-term need for funds
    - Marketable securities, including Treasury bills, commercial paper, and other instruments, are the main securities traded in the money market
    - The Eurocurrency market is the international equivalent of the domestic money market.
    - In contrast, the capital market is the forum in which savers and borrowers interact on a long-term basis

Review of Learning Goals (4 of 10)

- **LG 3 (Cont.)**
  - Describe the differences between the money market and the capital market.
    - Firms issue either debt (bonds) or equity (stock) securities in the capital market
    - Once issued, these securities trade on secondary markets that are either broker markets or dealer markets
    - An important function of the capital market is to determine the underlying value of the securities issued by businesses
    - In an efficient market, the price of a security is an unbiased estimate of its true value

Review of Learning Goals (5 of 10)

- **LG 4**
  - Understand the major regulations and regulatory bodies that affect financial institutions and markets.
    - The Glass-Steagall Act created the FDIC and imposed a separation between commercial and investment banks
    - The act was designed to limit the risks that banks could take and to protect depositors
    - More recently, the Gramm-Leach-Bliley Act essentially repealed the elements of Glass-Steagall pertaining to the separation of commercial and investment banks.
    - After the recent financial crisis, much debate has occurred regarding the proper regulation of large financial institutions

Review of Learning Goals (6 of 10)

- **LG 4 (Cont.)**
  - Understand the major regulations and regulatory bodies that affect financial institutions and markets.
    - The Dodd-Frank Act was passed in 2010 and contained a host of new regulatory requirements, the effects of which are yet to be determined
    - The Securities Act of 1933 and the Securities Exchange Act of 1934 are the major pieces of legislation shaping the regulation of financial markets

Review of Learning Goals (7 of 10)

- **LG 4 (Cont.)**
  - Understand the major regulations and regulatory bodies that affect financial institutions and markets.
    - The 1933 act focuses on regulating the sale of securities in the primary market, whereas the 1934 act deals with regulations governing transactions in the secondary market
    - The 1934 act also created the Securities and Exchange Commission, the primary body responsible for enforcing federal securities laws

Review of Learning Goals (8 of 10)

- **LG 5**
  - Describe the process of issuing common stock, including venture capital, going public, and the investment bank.
    - The initial external financing for business startups with attractive growth prospects typically comes in the form of private equity raised via a private equity placement
    - These investors can be either angel investors or venture capitalists (VCs). VCs usually invest in both early-stage and later-stage companies that they hope to take public to cash out their investments
    - The first public issue of a firm's stock is called an initial public offering (IPO).

Review of Learning Goals (9 of 10)

- **LG 5 (Cont.)**
  - Describe the process of issuing common stock, including venture capital, going public, and the investment bank.
    - The company selects an investment bank to advise it and to sell the securities
    - The lead investment bank may form a selling syndicate with other investment banks
    - The IPO process includes getting SEC approval, promoting the offering to investors, and pricing the issue

Review of Learning Goals (10 of 10)

- **LG 6**
  - Understand what is meant by financial markets in crisis, and describe some of the root causes of the Great Recession.
    - The financial crisis was caused by several factors related to investments in real estate
    - Financial institutions lowered their standards for lending to prospective homeowners, and institutions also invested heavily in mortgage-backed securities
    - When home prices fell and mortgage delinquencies rose, the value of the mortgage-backed securities held by banks plummeted, causing some banks to fail and many others to restrict the flow of credit to business
    - That, in turn, contributed to a severe recession in the United States that became known as the Great Recession

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