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CHAPTER 1: THE INVESTMENT ENVIRONMENT

PROBLEM SETS

1. While it is ultimately true that real assets determine the material well-being of an economy, financial innovation in the form of bundling and unbundling securities creates opportunities for investors to form more efficient portfolios. Both institutional and individual investors can benefit when financial engineering creates new products that allow them to manage their portfolios of financial assets more efficiently. Bundling and unbundling create financial products with new properties and sensitivities to various sources of risk that allows investors to reduce (or increase, depending on the strategy) volatility by hedging sources of risk more efficiently.

Estimated Time: 1–5 min

2. Securitization requires access to many potential investors. To attract these investors, the capital market needs:

    1. a safe system of business laws and low probability of confiscatory taxation/regulation;
    2. a well-developed investment banking industry;
    3. a well-developed system of brokerage and financial transactions; and
    4. well-developed media, particularly financial reporting.

    These characteristics are found in (and make for) a well-developed capital market.

Estimated Time: 1–5 min

3. Securitization leads to disintermediation; that is, securitization provides a means for market participants to bypass intermediaries. For example, mortgage-backed securities channel funds to the housing market without requiring that banks or thrift institutions make loans from their own portfolios.

    Securitization works well and can benefit many, but only if the market for these securities is highly liquid. As securitization progresses, financial intermediaries lose opportunities; they must increase other revenue-generating activities such as providing short-term liquidity to consumers and small business as well as other financial services.

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4. The existence of efficient capital markets and the liquid trading of financial assets make it easy for large firms to raise the capital needed to finance their investments in real assets. Suppose Ford or Amazon could not issue stocks or bonds to the public, it would far more difficult raising capital. Contraction of the supply of financial assets and access to that supply would make financing more difficult, thereby increasing the cost of capital. A higher cost of capital results in less investment and lower real growth.

Estimated Time: 1–5 min

5. Even if the firm does not need to issue stock in any particular year, the stock market is still important to the financial manager. The stock price provides important information about how the market values the firm's investment projects and ultimately the decisions of the managers. For example, if the stock price rises considerably, managers might conclude that the market believes the firm's prospects are bright. This might be a useful signal to the firm to proceed with an investment such as an expansion of the firm's business.
In addition, shares that can be traded in the secondary market are more attractive to initial investors since they know that they will be able to sell their shares. This in turn makes investors more willing to buy shares in a primary offering and thus improves the terms on which firms can raise money in the equity market.

   Remember that stock exchanges like those in New York, London, and Paris are the heart of capitalism. Firms can raise capital quickly in primary markets because investors know there are liquid secondary markets.

Estimated Time: 1–5 min

6.

   a. No. The increase in price did not add to the productive capacity of the economy.

   b. Yes, the value of the equity held in these assets has increased.

   c. Future homeowners are worse off, since mortgage liabilities have also increased. In addition, this housing price bubble will eventually burst and society as a whole (and most likely taxpayers) will suffer the damage.

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7.

a. The bank loan is a financial liability for Lanni and a financial asset for the bank. The cash Lanni receives is a financial asset. The new financial asset created is Lanni's promissory note to repay the loan.

b. Lanni transfers financial assets (cash) to the software developers. In return, Lanni receives the completed software package, which is a real asset. No financial assets are created or destroyed; cash is simply transferred from one party to another.

c. Lanni exchanges the real asset (the software) for a financial asset, which is 1,250 shares of Microsoft stock. If Microsoft issues new shares to pay Lanni, then this represents the creation of new financial assets.

d. By selling its shares in Microsoft, Lanni exchanges one financial asset (1,250 shares of stock) for another ($125,000 in cash). Lanni uses the financial asset of $50,000 in cash to repay the bank and retire its promissory note. The bank must return its financial asset to Lanni. The loan is "destroyed" in the transaction since it is retired when paid off and no longer exists.

Estimated Time: 1–5 min

8.

a.

Assets		**Liabilities & Shareholders' Equity**	
Cash	$ 70,000	Bank loan	$ 50,000
Computers	30,000	Shareholders' equity	50,000
Total	$100,000	Total	$100,000

Ratio of real assets to total assets = $\$30,000/\$100,000 = \mathbf{0.30}$

b.

Assets		**Liabilities & Shareholders' Equity**	
Software product*	$ 70,000	Bank loan	$ 50,000
Computers	30,000	Shareholders' equity	50,000
Total	$100,000	Total	$100,000

*Valued at cost

Ratio of real assets to total assets = $\$100,000/\$100,000 = \mathbf{1.0}$

c.

Assets		**Liabilities & Shareholders' Equity**	
Microsoft shares	$125,000	Bank loan	$ 50,000
Computers	30,000	Shareholders' equity	105,000
Total	$155,000	Total	$155,000

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Ratio of real assets to total assets = $\$30,000/\$155,000 =$ **0.19**

Conclusion: when the firm starts up and raises working capital, it is characterized by a low ratio of real assets to total assets. When it is in full production, it has a high ratio of real assets to total assets. When the project "shuts down" and the firm sells it off for cash, financial assets once again replace real assets.

Estimated Time: 1–5 min

9.

a. For commercial banks, the ratio is: $\$191.9 / \$22,564.2 =$ **0.0085** or **0.85%.**

b. For nonfinancial firms, the ratio is: $\$25,974 / \$50,856 =$ **0.5107** or **51.07%.**

c. The difference should be expected primarily because the bulk of the business of financial institutions is to make loans and the bulk of the business of nonfinancial corporations is to invest in equipment, manufacturing plants, and property. The loans are financial assets for financial institutions, but the investments of nonfinancial corporations are real assets.

Estimated Time: 1–5 min

10.

a. Primary market transaction in which gold certificates are being offered to public investors for the first time by an underwriting syndicate led by JW Korth Capital.

b. The certificates are derivative assets because while represent an investment in physical gold, each investor receives a certificate and no gold. Note that investors can convert the certificate into gold during the 4-year period. The security's value is derived from gold.

Estimated Time: 1–5 min

11.

a. A fixed salary means that compensation is, in the short run, independent of the firm's success. This salary structure does not tie the manager's immediate compensation to the success of the firm, so a manager might not feel too compelled to work hard to maximize firm value. However, the manager might view this as the safest compensation structure and therefore value it more highly.

b. A salary that is paid in the form of stock in the firm means that the manager earns the most when the shareholders' wealth is maximized. Five years of vesting helps align the interests of the employee with the long-term performance of the firm. This structure is therefore most likely to align the interests of managers and shareholders. If stock compensation is overdone, however, the manager might view

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it as overly risky since the manager's career is already linked to the firm, and this undiversified exposure would be exacerbated with a large stock position in the firm.

c. A profit-linked salary creates great incentives for managers to contribute to the firm's success. However, a manager whose salary is tied to short-term profits will be risk seeking, especially if these short-term profits determine salary or if the compensation structure does not bear the full cost of the project's risks (e.g., docked pay for failed projects). Shareholders, in contrast, bear the losses as well as the gains on the project and might be less willing to assume that risk.

Estimated Time: 1–5 min

12. Even if an individual shareholder could monitor and improve managers' performance and thereby increase the value of the firm, the payoff would be small, since the ownership share in a large corporation would be very small. For example, if you own $10,000 of Ford stock and can increase the value of the firm by 5%, a very ambitious goal, you benefit by only: $0.05 \times \$10,000 = \$500$. The cost, both personal and financial to an individual investor, is likely to be prohibitive and would typically easily exceed any accrued benefits (in this case $500).
In contrast, a creditor, such as a bank, that has a multimillion-dollar loan outstanding to the firm has a big stake in making sure that the firm can repay the loan. It is clearly worthwhile for the bank to spend considerable resources to monitor the firm. Large institutional investors will also have commensurately large positions in companies and will therefore monitor more closely.

Estimated Time: 1–5 min

13. Answers may vary:
- Mutual funds accept funds from small investors and invest, on behalf of these investors, in the domestic and international securities markets.
- Pension funds accept funds and then invest in a wide range of financial securities, on behalf of current and future retirees, thereby channeling funds from one sector of the economy to another.
- Venture capital firms pool the funds of private investors and invest in start-up firms.
- Leveraged buyout funds pool the funds of private investors and, with large amounts of debt, purchase publicly traded companies.
- Banks accept deposits from customers and loan those funds to businesses or use the funds to buy securities of large corporations.

Estimated Time: 1–5 min

14. Treasury bills serve a purpose for investors who prefer a low-risk investment with immense liquidity. The lower average rate of return compared to stocks is the price investors pay for predictability of investment performance and portfolio value.

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Estimated Time: 1–5 min

15. With a top-down investing style, you focus on asset allocation or the broad composition of the entire portfolio, which is the major determinant of overall performance. Moreover, top-down management is the natural way to establish a portfolio with a level of risk consistent with your risk tolerance. The disadvantage of an *exclusive* emphasis on top-down issues is that you may forfeit the potential high returns that could result from identifying and concentrating in undervalued securities or sectors of the market.
With a bottom-up investing style, you benefit from identifying undervalued securities. The disadvantage is that you might overlook the overall composition of your portfolio, resulting in a nondiversified portfolio or a portfolio with a risk level inconsistent with the appropriate level of risk tolerance. In addition, this technique tends to require more active management, thus generating more transaction costs. Finally, the bottom-up analysis may be incorrect, expended effort and money fail to beat a simple buy-and-hold strategy.

Estimated Time: 1–5 min

16. You should be skeptical. If the author knows how to achieve such returns, why would the author then be so ready to sell the secret to others? Financial markets are very competitive; one of the implications of this fact is that riches do not come easily. High-expected returns require bearing some risk, and obvious bargains are few and far between. Any bargains, once discovered by the broad market, disappear quickly. Odds are that the only one getting rich from the book is its author.

Estimated Time: 1–5 min

17. Financial assets provide for a means to acquire real assets as well as an expansion of these real assets. Financial assets provide a measure of liquidity to real assets and allow for investors to reduce risk more effectively through diversification.

Estimated Time: 1–5 min

18. Allowing traders to share in the profits increases the traders' willingness to assume risk. Traders will share in the upside potential directly in the form of higher compensation but only in the downside indirectly in the form of potential job loss if performance is bad enough. This scenario creates a form of agency conflict known as moral hazard, in which the owners of the financial institution share in both the total profits and losses, while the traders will tend to share more of the gains than the losses.

Estimated Time: 1–5 min

19. Answers may vary, however, students should touch on the following: increased transparency, regulations to promote capital adequacy by increasing the frequency

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of gain or loss settlement, incentives to discourage excessive risk-taking, and the promotion of more accurate and unbiased risk assessment.

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CHAPTER 1: THE INVESTMENT ENVIRONMENT

CHAPTER OVERVIEW

The student is introduced to the general concept of investing—to forego spending cash today in the hopes of increasing wealth in the future. Real assets are differentiated from financial assets, and the major categories of financial assets are defined. The risk/return trade-off and the reality that most assets are efficiently priced most of the time are introduced. The role of financial intermediaries is discussed. The chapter concludes with a presentation of the financial crisis of 2008, its causes and its implications, as well as regulatory attempts to address those consequences.

LEARNING OBJECTIVES

After studying this chapter, students should understand the overall investment process and understand some key elements involved in it. They should understand differences in financial and real assets and be able to identify the major components of the investment process. They should be able to describe a derivative security and understand how it is used. Finally, they should understand the causes and effects of the financial crisis of 2008.

PRESENTATION OF CHAPTER MATERIAL

1.1 Real Assets Versus Financial Assets (PowerPoint Slide 3)

The main elements of the chapter are presented here. The concept of giving up current consumption to invest in assets that allow greater consumption in the future is the key notion to start the discussion of the chapter material. The discussion of real and financial assets can be used to discuss key differences in the assets and their appropriateness as investment vehicles.

1.2 Financial Assets (PowerPoint Slides 4–7)

Fixed income securities include both long-term and short-term instruments. The essential element of debt securities and the other classes of financial assets is the fixed or fixed formula payments that are associated with these securities. Common stock that features residual payments to the owners can be contrasted with the relatively certain debt claims. A derivative security is a security whose performance is based on or tied to another asset or financial security. The discussion of derivative securities presented here should be brief and used to highlight the discussion of innovation in our markets. Students may find interest in key elements of each derivative and how they relate the properties to debt and equity securities. Summary statistics for balance sheets and domestic net worth for U.S. households (Tables 1.1 and 1.2) are presented.

1.3 Financial Markets and the Economy (PowerPoint Slides 8–10)

Financial assets (and hence markets where they are traded) play a big role in developed economies by allowing to make the most of the economy's real assets. Markets encourage allocation of capital to firms that have the best prospects in the view of the market participants. Markets allow participants to adjust consumption and to choose levels of risk that are appropriate. Financial markets also allow for separation of management and ownership. Current issues related to corporate governance and ethics issues are presented here, which provides students a great opportunity for discussion. Be sure to mention:

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- The informational role of financial markets
- Consumption timing
- Allocation of risk
- Separation of ownership and management
- Corporate governance and corporate ethics

1.4 The Investment Process (PowerPoint Slides 11–12)

Section 1.4 describes the major components of the investment process. Two of the major elements in the investment process, asset allocation and security selection, can be used to discuss the content and coverage in the course. Previewing the concept of risk–return trade-off is important for the development of portfolio theory and many other concepts developed in the course. The discussion of active and passive management styles is related to the concept of market efficiency.

1.5 Markets Are Competitive (PowerPoint Slides 13–15)

The two major elements of a competitive market are the risk–return trade-off and market efficiency. Here, efficiency can be introduced in broad terms; however, the conclusion is there should be a risk–return trade-off in securities markets. Also, contrast passive management with active management, which combines security selection and timing. Material in later chapters can be previewed in terms of emphasis on elements of active management. On the other hand, the essential element related to passive management is holding an efficient portfolio. Here, efficiency means not only diversification but also appropriate risk levels, cash flow characteristics, and administration costs.

1.6 The Players (PowerPoint Slides 16–21)

The major participants in the financial markets are discussed here and include the following:

- Firms are net demanders of capital.
- Households typically are net suppliers of capital.
- Governments can be borrowers or lenders.

Tables 1.3 and 1.4 represent balance sheets of FDIC-insured commercial banks and nonfinancial corporations in the United States. Governments, households, and businesses can be issuers and investors in securities. Financial intermediaries include many groups who bring issuers and investors together. Investment bankers perform many specialized services for businesses and operate in the primary market. The secondary market is for investors to trade previously issued securities among themselves. Venture capital provides financial aid for start-up firms.

1.7 The Financial Crisis of 2008 (PowerPoint Slides 22–34)

Section 1.7 presents the Financial Crisis of 2008, with emphasis on its antecedents and its significance in the future of the financial world. It begins with events leading up to the crisis and introduces the important Case-Shiller Index of U.S. housing prices (of which the students should be familiar). The discussion turns to the mechanics of the mortgage pass-through security. (Instructors will note that the generalized idea of securitization is presented here as well.) The cash flow for these securities is depicted graphically in Figure 1.4. The authors also discuss in detail the role government-sponsored entities Fannie Mae and Freddie Mac played in the crisis.

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The text introduces mortgage derivatives in this section, focusing on collateralized debt obligations (CDOs) and credit default swaps (CDS). This section ties these derivatives with the all important concept of systemic risk (where problems in one financial sector spill over to other sectors). Students will need to tie together several disparate concepts here for a strong understanding of how this crisis occurred.

This section then describes the subprime housing meltdown, the subsequent credit freeze, and the impact these events had on the real economy. The government's response is presented. Students can have great discussions on the effectiveness of the various fiscal and monetary actions during this time. The section ends with a brief discussion of the Dodd–Frank Reform Act.

1.8 Outline of the Text

In this section, the authors divide the text into seven independent learning parts, with several chapters in each part. This can be useful for instructors when developing the course syllabus.

- Part 1 is an introduction to financial markets, instruments, and trading of securities.
- Part 2 starts with a general discussion of risk and return and capital market history and then moves on to investor risk preferences, efficient diversification, and portfolio optimization.
- Part 3 investigates the implications of portfolio theory and introduces the capital asset pricing model.
- Part 4 discusses debt markets and Part 5 equity markets.
- Part 6 covers derivative assets like options and futures.
- Part 7 serves as an introduction to active investment management.

KEY TERMS

investment
real assets
financial assets
fixed-income (debt) securities
equity
derivative securities
agency problem
asset allocation
security selection
security analysis
risk-return trade-off
passive management
ative management
financial intermediaries
investment companies
investment bankers
primary market
secondary market
venture capital (VC)
private equity
securitization
systemic risk

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