**FIN 30600**

**Chapters 1-4 problems**

**Chapter 1**

1. What are the differences between equity and fixed-income securities?
2. What is the difference between a primary asset and a derivative asset?
3. What is the difference between asset allocation and security selection?
4. What are agency problems?  What are some approaches to solving them?
5. What are the differences between real and financial assets?
6. How does investment banking differ from commercial banking?

8. Suppose that in a wave of pessimism, housing prices fall by 10% across the entire economy.

   a. Has the stock of real assets of the economy changed?

   b. Are individuals less wealthy.

   c. Can you reconcile your answers to (a) and (b)?

9. Lanni Products is a start-up computer software development firm.  It currently owns computer equipment worth $30,000 and has cash on hand of $20,000 contributed by Lanni's owners.  For each of the following transactions, identify the real and/or financial assets that trade hands.  Are any financial assets created or destroyed in the transaction?

   a. Lanni takes out a bank loan.  It receives $50,000 in cash and signs a note promising to pay back the loan over three years.

   b. Lanni uses the cash from the bank plus $20,000 of its own funds to finance the development of new financial planning software.

   c. Lanni sells the software product to Microsoft, which will market it to the public under the Microsoft name.  Lanni accepts payment in the form of 5,000 shares of Microsoft stock.

   d. Lanni sells the shares of stock for $25 per share and uses part of the proceeds to pay off the bank loan.

10. Reconsider Lanni Products from the previous problem.

a. Prepare its balance sheet just after it gets the bank loan. What is the ratio of real assets to total assets?

b. Prepare the balance sheet after Lanni spends the $70,000 to develop its software product. What is the ratio of real assets to total assets?

c. Prepare the balance sheet after Lanni accepts the payment of shares from Microsoft. What is the ratio of real assets to total assets?

11. Financial engineering has been disparaged as nothing more than paper shuffling. Critics argue that resources used for rearranging wealth (that is, bundling and unbundling financial assets) might be better spent on creating wealth (that is, creating real assets). Evaluate this criticism. Are any benefits realized by creating an array of derivative securities from various primary securities?

12. Examine the balance sheet of commercial banks in Table 1.3. What is the ratio of real assets to total assets? What is that ratio for nonfinancial firms (Table 1.4)? Why should this difference be expected?

## TABLE 1.3

### Balance sheet of commercial banks, 2008

| Assets | $ Billion | % Total | Liabilities and Net Worth | $ Billion | % Total |
|---|---|---|---|---|---|
| Real assets | | | Liabilities | | |
| Equipment and premises | $ 106.9 | 0.9% | Deposits | $ 7,422.7 | 65.0% |
| Other real estate | 14.3 | 0.1 | Borrowed funds | 2,016.6 | 17.6 |
| Total real assets | $ 121.2 | 1.1% | Federal funds and repurchase agreements | 831.5 | 7.3 |
| | | | Total liabilities | $10,270.8 | 89.9% |
| Financial assets | | | | | |
| Cash | $ 519.1 | 4.5% | | | |
| Investment securities | 2,356.9 | 20.6 | | | |
| Loans and leases | 6,562.9 | 57.4 | | | |
| Other financial assets | 884.5 | 7.7 | | | |
| Total financial assets | $10,323.4 | 90.3 | | | |
| Other assets | | | | | |
| Intangible assets | $ 439.3 | 3.8% | | | |
| Other | 542.3 | 4.7 | | | |
| Total other assets | 981.6 | 8.6 | Net worth | 1,155.4 | 10.1 |
| Total | $11,426.2 | 100.0% | | $11,426.2 | 100.0% |

Note: Column sums may differ from totals because of rounding error.
Source: Federal Deposit Insurance Corporation, www.fdic.gov, September 2008.

## TABLE 1.4

**Balance sheet of nonfinancial U.S. business, 2008**

| Assets | $ Billion | % Total | Liabilities and Net Worth | $ Billion | % Total |
|---|---|---|---|---|---|
| Real assets | | | Liabilities | | |
| Equipment and software | $ 3,923 | 13.8% | Bonds and mortgages | $ 4,583 | 16.1% |
| Real estate | 9,001 | 31.6 | Bank loans | 701 | 2.5 |
| Inventories | 1,849 | 6.5 | Other loans | 846 | 3.0 |
| | | | Trade debt | 2,036 | 7.1 |
| Total real assets | $14,773 | 51.8% | Other | 4,396 | 15.4 |
| | | | Total liabilities | $12,561 | 44.1% |
| Financial assets | | | | | |
| Deposits and cash | $ 571 | 2.0% | | | |
| Marketable securities | 992 | 3.5 | | | |
| Trade and consumer credit | 2,468 | 8.7 | | | |
| Other | 9,704 | 34.0 | | | |
| Total financial assets | 13,734 | 48.2 | Net worth | 15,946 | 55.9 |
| Total | $28,507 | 100.0% | | $28,507 | 100.0% |

Note: Column sums may differ from totals because of rounding error.

Source: *Flow of Funds Accounts of the United States*, Board of Governors of the Federal Reserve System, June 2008.

14. Discuss the advantages and disadvantages of the following forms of managerial compensation in terms of mitigating agency problems, that is, potential conflicts of interest between managers and shareholders.

    a. A fixed salary.

    b. Stock in the firm that must be held for five years.

    c. A salary linked to the firm's profits.

21. The average rate of return on investments in large stocks has outpaced that on investments in Treasury bills by over 7% since 1926. Why, then, does anyone invest in Treasury bills?

## Chapter 2

8. How does a municipal revenue bond differ from a general obligation bond? Which would you expect to have a lower yield to maturity?

9. Why are corporations more apt to hold preferred stock than are other potential investors?

10. What is meant by limited liability?

12. A municipal bond carries a coupon rate of 6 3/4^% and is trading at par. What would be the equivalent taxable yield of this bond to a taxpayer in a 35% tax bracket?

13. Suppose that short-term municipal bonds currently offer yields of 4%, while comparable taxable bonds pay 5%. Which gives you the higher after-tax yield if your tax bracket is:

   a. Zero        b. 10%        c. 20%        d. 30%

14. An investor is in a 30% combined federal plus state tax bracket. If corporate bonds offer 8% yields, what must municipals offer for the investor to prefer them to corporate bonds?

20. What problems would confront a mutual fund trying to create an index fund tied to an equally weighted index of a broad stock market?

23. Which security should sell at a greater price?

   a. A 10-year Treasury bond with a 9% coupon rate or a 10-year T-bond with a 10% coupon.

   b. A three-month expiration call option with an exercise price of $40 or a three-month call on the same stock with an exercise price of $35.

   c. A put option on a stock selling at $50 or a put option on another stock selling at $60. (All other relevant features of the stocks and options are assumed to be identical.)

29. What would you expect to happen to the spread between yields on commercial paper and Treasury bills if the economy were to enter a steep recession?

**Chapter 3**

1. What is the difference between an IPO and an SEO?
2. What are some different components of the effective costs of buying or selling shares of stock?
3. What is the difference between a primary and secondary market?
4. How do specialist firms earn their profits?
5. In what circumstances are private placements more likely to be used than public offerings?
6. What are the differences between a stop-loss order, a limit sell order, and a market order?

7. What is a block order, and why has the proportion of trades done in block orders declined in recent years?
8. What is the role of an underwriter? A prospectus?
9. How do margin trades magnify both the upside potential and downside risk of an investment portfolio?
10. Suppose you short sell 100 shares of IBM, now selling at $120 per share.
    a. What is your maximum possible loss?
    b. What happens to the maximum loss if you simultaneously pace a stop-buy order at $128?

**Chapter 4**

29. Suppose you observe the investment performance of 350 portfolio managers for five years and rank them by investment returns during each year. After five years. You find that 11 of the funds have investment returns that place the fund in the top half of the sample in each and every year of your sample. Such consistency of performance indicates to you that these must be funds whose managers are in fact skilled, and you invest your money in these funds. Is your conclusion warranted?