Chapter 3

Securities markets

PROBLEM SETS

SOLUTIONS

Basic

1. An IPO is the first time a formerly privately owned company sells shares to the general public. A placement is the issuance of shares by a company that has already undergone an IPO.

2. Costs can be categorised as explicit, such as brokerage fees, or implicit such as the bid−ask spread and market impact.

3. The primary market is the market for new issues of securities, while the secondary market is the market for already-existing securities. Companies sell shares in the primary market, while investors purchase shares from other investors in the secondary market.

4. A placement is a quick way to raise additional capital. A dividend reinvestment plan would not be appropriate.

5. A stop loss order is a trade that is not to be executed unless the stock hits a specified price limit. The stop loss is used to limit losses when prices are falling. A limit sell order is an order specifying a price at which an investor is willing to sell a security at. A market order directs the broker to buy or sell at whatever price is available in the market.

6. Margin is a type of leverage that allows investors to post only a portion of the value of the security they purchase. As such, when the price of the security rises or falls, the gain or loss represents a much higher percentage, relative to the actual money invested.

Intermediate

7. a. 55.50
   b. 55.25
   c. The trade will not be executed because the bid price is lower than the price specified in the limit sell order.
   d. The trade will not be executed because the asked price is greater than the price specified in the limit buy order.

8. a. The shares are purchased for: 300 x \$40 = \$12 000
   The amount borrowed is \$4000. Therefore the investor put up equity or margin of \$8000.
   b. If the share price falls to \$30 then the value of the shares fall to \$9000. At the end of the year (ignoring interest) the amount owed to the broker is:
   \$4000
   Therefore the remaining margin in the investor's account is:
   \$9000 − \$4000 = \$5000
   The percentage margin is now: \$5000/\$9000 = 0.56 = 56%
   Therefore the investor will not receive a margin call.

9. a. The initial margin was: 0.50 x 1000 x \$40 = \$20 000
   As a result of the increase in the share price Old Economy Traders loses:
   \$10 x 1000 = \$10 000
   Therefore, margin decreases by \$10 000.
   b. The percentage margin is: \$10 000/(\$50 x 1000) = 0.20 = 20%
   So there will be a margin call.

10. a. The buy order will be filled at the best limit sell order price: \$50.25
    b. The next market buy order will be filled at the next-best limit sell order price: \$51.50

11. The value of the 200 shares is 200*P*. Equity is (200*P* – \$5000). You will receive a margin call when:

$$\frac{200P - \$5000}{200P} = 0.30$$, when P = \$35.71 or lower.

12. a. Initial margin is 50% of \$5000 or \$2500.
    b. Total assets are \$7500 (\$5000 from the sale of the stock and \$2500 put up for margin). Liabilities are 100*P*. Therefore, net worth is (\$7500 – 100*P*). A margin call will be issued when:

$$\frac{\$7500 - 100P}{100P} = 0.30, \text{ when } P = \$57.69 \text{ or higher.}$$

13. The broker is instructed to attempt to sell your Marriott shares as soon as the Marriott shares trade at a bid price of \$20 or less. Here, the broker will attempt to execute, but may not be able to sell at \$20, since the bid price is now \$19.95. The price at which you sell may be more or less than \$20 because the stop loss becomes a market order to sell at current market prices.

14. a. You will not receive a margin call. You borrowed \$20 000 and with another \$20 000 of your own equity you bought 1000 shares of Worley Parsons at \$40 per share. At \$35 per share, the market value of the share is \$35 000, your equity is \$15 000 and the percentage margin is: \$15 000/\$35 000 = 42.9%. Your percentage margin exceeds the required maintenance margin.

    b. You will receive a margin call when:

$$\frac{1000P - \$20\,000}{1000P} = 0.35, \text{ when } P = \$30.77 \text{ or lower.}$$

Challenge

15. The total cost of the purchase is: \$40 x 500 = \$20 000

    You borrow \$5000 from your broker and invest \$15 000 of your own funds. Your margin account starts out with net worth of \$15 000.

    a. The value of the 500 shares is 500*P*. Equity is (500*P* – \$5000). You will receive a margin call when:

$$\frac{500P - \$5000}{500P} = 0.25, \text{ when } P = \$13.33 \text{ or lower.}$$

    b. The value of the 500 shares is 500*P*. But you have now borrowed \$10 000 instead of \$5000. Therefore, equity is (500*P* – \$10 000). You will receive a margin call when:

$$\frac{500P - \$10\,000}{500P} = 0.25, \text{ when } P = \$26.67.$$

CFA problems

1. (d): The broker will sell, at current market price, after the first transaction at \$55 or less.

2. (b): 34.25 or higher