

Chapter 3 Securities Markets

1.
 - a. In addition to the explicit fees of \$70,000, FBN appears to have paid an implicit price in underpricing of the IPO. The underpricing is \$3 per share, or a total of \$300,000, implying total costs of \$370,000.
 - b. No. The underwriters do not capture the part of the costs corresponding to the underpricing. The underpricing may be a rational marketing strategy. Without it, the underwriters would need to spend more resources in order to place the issue with the public. The underwriters would then need to charge higher explicit fees to the issuing firm. The issuing firm may be just as well off paying the implicit issuance cost represented by the underpricing.

2.
 - a. In principle, potential losses are unbounded, growing directly with increases in the price of IBM.
 - b. If the stop-buy order can be filled at \$128, the maximum possible loss per share is \$8. If the price of IBM shares go above \$128, then the stop-buy order would be executed, limiting the losses from the short sale.

3.
 - a. The stock is purchased for: \$12,000
The amount borrowed is \$4,000. Therefore, the investor put up equity, or margin, of \$8,000.
 - b. If the share price falls to \$30, then the value of the stock falls to \$9,000. By the end of the year, the amount of the loan owed to the broker grows to:
$$\$4,000 \times 1.08 = \$4,320$$

Therefore, the remaining margin in the investor's account is:
$$\$9,000 - \$4,320 = \$4,680$$

The percentage margin is now: $\$4,680/\$9,000 = 0.52 = 52\%$

Therefore, the investor will not receive a margin call.
 - c. The rate of return on the investment over the year is:
$$(\text{Ending equity in the account} - \text{Initial equity})/\text{Initial equity}$$
$$= -0.415 = -41.5\%$$

- 4.
- a. The initial margin was: \$20,000
As a result of the increase in the stock price Old Economy Traders loses:
\$10,000
Therefore, margin decreases by \$10,000. Moreover, Old Economy Traders must pay the dividend of \$2 per share to the lender of the shares, so that the margin in the account decreases by an additional \$2,000. Therefore, the remaining margin is:
\$8,000
 - b. The percentage margin is: $0.16 = 16\%$
So there will be a margin call.
 - c. The equity in the account decreased from \$20,000 to \$8,000 in one year, for a rate of return of: $-0.60 = -60\%$
- 6.
- 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
 - c. You would want to increase your inventory. There is considerable buying demand at prices just below \$50, indicating that downside risk is limited. In contrast, limit sell orders are sparse, indicating that a moderate buy order could result in a substantial price increase.
- 7.
- a. You buy 200 shares of Telecom for \$10,000. These shares increase in value by 10%, or \$1,000. You pay interest of: $0.08 \times 5,000 = \$400$
The rate of return will be:
 $0.12 = 12\%$
 - b. The value of the 200 shares is $200P$. Equity is $(200P - \$5,000)$. You will receive a margin call when:
 $P = \$35.71$ or lower

- 8.
- a. Initial margin is 50% of \$5,000 or \$2,500.
 - b. Total assets are \$7,500 (\$5,000 from the sale of the stock and \$2,500 put up for margin). Liabilities are 100P. Therefore, net worth is $(\$7,500 - 100P)$. A margin call will be issued when:
 $P = \$57.69$ or higher

9. The total cost of the purchase is: \$20,000

You borrow \$5,000 from your broker, and invest \$15,000 of your own funds. Your margin account starts out with net worth of \$15,000.

- a.
 - i. Net worth increases to: \$17,000
 Percentage gain = $0.1333 = 13.33\%$
 - ii. With price unchanged, net worth is unchanged.
 Percentage gain = zero
 - iii. Net worth falls to $(\$36 \times 500) - \$5,000 = \$13,000$
 Percentage gain = $(-\$2,000/\$15,000) = -0.1333 = -13.33\%$

The relationship between the percentage return and the percentage change in the price of the stock is given by:

$$\begin{aligned} \% \text{ return} &= \% \text{ change in price} \times \frac{\text{Total investment}}{\text{Investor's initial equity}} \\ &= \% \text{ change in price} \times 1.333 \end{aligned}$$

For example, when the stock price rises from \$40 to \$44, the percentage change in price is 10%, while the percentage gain for the investor is:

$$\% \text{ return} = 13.33\%$$

- b. The value of the 500 shares is 500P. Equity is $(500P - \$5,000)$. You will receive a margin call when:
 $P = \$13.33$ or lower
- c. The value of the 500 shares is 500P. But now you have borrowed \$10,000 instead of \$5,000. Therefore, equity is $(500P - \$10,000)$. You will receive a margin call when:
 $P = \$26.67$

With less equity in the account, you are far more vulnerable to a margin call.

- d. By the end of the year, the amount of the loan owed to the broker grows to:

\$5,400

The equity in your account is $(500P - \$5,400)$. Initial equity was \$15,000. Therefore, your rate of return after one year is as follows:

- (i) $0.1067 = 10.67\%$
- (ii) $-0.0267 = -2.67\%$
- (iii) $-0.1600 = -16.00\%$

The relationship between the percentage return and the percentage change in the price of Intel is given by:

$$\% \text{ return} = \left(\% \text{ change in price} \times \frac{\text{Total investment}}{\text{Investor's initial equity}} \right) - \left(8\% \times \frac{\text{Funds borrowed}}{\text{Investor's initial equity}} \right)$$

For example, when the stock price rises from \$40 to \$44, the percentage change in price is 10%, while the percentage gain for the investor is:

10.67%

- e. The value of the 500 shares is $500P$. Equity is $(500P - \$5,400)$. You will receive a margin call when:

$P = \$14.40$ or lower

10.

- a. The gain or loss on the short position is: $(-500 \times \Delta P)$

Invested funds = \$15,000

Therefore: rate of return = $(-500 \times \Delta P)/15,000$

The rate of return in each of the three scenarios is:

(i) rate of return = $-0.1333 = -13.33\%$

(ii) rate of return = 0%

(iii) rate of return = $+0.1333 = +13.33\%$

Total assets in the margin account are \$20,000 (from the sale of the stock) + \$15,000 (the initial margin) = \$35,000. Liabilities are $500P$. A margin call will be issued when:

$$P = \$56 \text{ or higher}$$

- b. With a \$1 dividend, the short position must now pay on the borrowed shares: $(\$1/\text{share} \times 500 \text{ shares}) = \500 . Rate of return is now:

$$[(-500 \times \Delta P) - 500]/15,000$$

(i) rate of return = $-0.1667 = -16.67\%$

(ii) rate of return = $-0.0333 = -3.33\%$

(iii) rate of return = $+0.1000 = +10.00\%$

Total assets are \$35,000, and liabilities are $(500P + 500)$. A margin call will be issued when:

$$P = \$55.20 \text{ or higher}$$

13.

- 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.

15. The SuperDot system expedites the flow of orders from exchange members to the specialists. It allows members to send computerized orders directly to the floor of the exchange, which allows the nearly simultaneous sale of each stock in a large portfolio. This capability is necessary for program trading.

17.

- a. You will not receive a margin call. You borrowed \$20,000 and with another \$20,000 of your own equity you bought 1,000 shares of Disney at \$40 per share. At \$35 per share, the market value of the stock is \$35,000, your equity is \$15,000, and the percentage margin is: 42.9%. Your percentage margin exceeds the required maintenance margin.
- b. You will receive a margin call when:

$$P = \$30.77 \text{ or lower}$$

18. The proceeds from the short sale (net of commission) were: \$1,350

A dividend payment of \$200 was withdrawn from the account. Covering the short sale at \$9 per share cost you (including commission): \$950

Therefore, the value of your account is equal to the net profit on the transaction:
\$200

Note that your profit (\$200) equals (100 shares x profit per share of \$2). Your net proceeds per share was:

\$14	selling price of stock
-\$ 9	repurchase price of stock
-\$ 2	dividend per share
-\$ 1	2 trades x \$0.50 commission per share
\$ 2	

19. d - The broker will sell, at current market price, after the first transaction at \$55 or less.

20. b

21. d