

Chapter 2 Asset Classes and Financial Instruments

1. Taxable equivalent yield = 0.1038
2. c
3.
 - a. You would have to pay the asked price of:
 $118:31 = 118.9688\%$ of par = \$1,189,688
 - b. The coupon rate is 11.750%, implying coupon payments of \$117.50 annually or, more precisely, \$58.75 semiannually.
 - c. Current yield = Annual coupon income/price =
 $11.75/118.9688 = 0.0988 = 9.88\%$
4. Preferred stock is like long-term debt in that it typically promises a fixed payment each year. In this way, it is a perpetuity. Preferred stock is also like long-term debt in that it does not give the holder voting rights in the firm.

Preferred stock is like equity in that the firm is under no contractual obligation to make the preferred stock dividend payments. Failure to make payments does not set off corporate bankruptcy. With respect to the priority of claims to the assets of the firm in the event of corporate bankruptcy, preferred stock has a higher priority than common equity but a lower priority than bonds.

5. Money market securities are referred to as “cash equivalents” because of their great liquidity. The prices of money market securities are very stable, and they can be converted to cash (i.e., sold) on very short notice and with very low transaction costs.
6. The total before-tax income is \$4. After the 70% exclusion, taxable income is:
 $0.30 \times \$4 = \1.20
Therefore:
Taxes = \$0.36
After-tax income = \$3.64
After-tax rate of return = 9.10%

- 7.
- The closing price today is \$74.59, which is \$0.17 higher than yesterday's price. Therefore, yesterday's closing price was: $\$74.59 - \$0.17 = \$74.42$
 - You could buy: 67.03 shares
 - Your annual dividend income would be 1.20 % of \$5,000, or \$60.
 - Earnings per share can be derived from the price-earnings (PE) ratio.
Price/Earnings = 16 and Price = \$74.59 so that Earnings = $\$74.59/16 = \4.66
- 8.
- At $t = 0$, the value of the index is: 80
At $t = 1$, the value of the index is: 83.3333
The rate of return is: 4.167%
 - In the absence of a split, stock C would sell for 110, and the value of the index would be: 83.3333

After the split, stock C sells at 55. Therefore, we need to set the divisor (d) such that:
 $d = 2.340$
 - The rate of return is zero. The index remains unchanged, as it should, since the return on each stock separately equals zero.
- 9.
- Total market value at $t = 0$ is: 39,000
Total market value at $t = 1$ is: 40,500
Rate of return = 3.85%
 - The return on each stock is as follows:
 $R_a = 0.0556$
 $R_b = -0.10$
 $R_c = 0.10$
The equally-weighted average is: $0.0185 = 1.85\%$
10. The after-tax yield on the corporate bonds is: 6.30%
Therefore, the municipals must offer at least 6.30% yields.

- 11.
- The taxable bond. With a zero tax bracket, the after-tax yield for the taxable bond is the same as the before-tax yield (5%), which is greater than the yield on the municipal bond.
 - The taxable bond. The after-tax yield for the taxable bond is:
4.5%
 - You are indifferent. The after-tax yield for the taxable bond is:
04.0%
The after-tax yield is the same as that of the municipal bond.
 - The municipal bond offers the higher after-tax yield for investors in tax brackets above 20%.
- 13.
- The higher coupon bond
 - The call with the lower exercise price
 - The put on the lower priced stock
- 14.
- The December maturity futures price is \$2.3375 per bushel. If the contract closes at \$2.15 per bushel in December, your profit / loss on each contract (for delivery of 5,000 bushels of oats) will be: \$937.50 loss
 - There are 3,907 contracts outstanding, representing 19,535,000 bushels of oats.
- 15.
- Yes. As long as the stock price at expiration exceeds the exercise price, it makes sense to exercise the call.
Gross profit is: \$6
Net profit = \$0.50 loss
Rate of return = - .0769 or 7.69% loss
 - Yes, exercise.
Gross profit is: \$11
Net profit = \$0.40 gain
Rate of return = 0.0377 or 3.77% gain

- c. A put with exercise price \$95 would expire worthless for any stock price equal to or greater than \$95. An investor in such a put would have a rate of return over the holding period of -100%.

16. There is always a chance that the option will expire in the money. Investors will pay something for this chance of a positive payoff.

17.

	Value of call at expiration	Initial Cost	Profit
a.	0	4	-4
b.	0	4	-4
c.	0	4	-4
d.	5	4	1
e.	10	4	6

	Value of put at expiration	Initial Cost	Profit
a.	10	6	4
b.	5	6	-1
c.	0	6	-6
d.	0	6	-6
e.	0	6	-6

18. A put option conveys the right to sell the underlying asset at the exercise price. A short position in a futures contract carries an obligation to sell the underlying asset at the futures price.

19. A call option conveys the right to buy the underlying asset at the exercise price. A long position in a futures contract carries an obligation to buy the underlying asset at the futures price.