CHAPTER 4

CONCEPT REVIEW QUESTIONS

1. Why is it important for corporate managers to understand how bonds and shares are priced?

Managers need to know this because (1) firms regularly issue stocks and bonds to raise money for investment (2) understanding how securities are priced is helpful when conducting an acquisition or a divestiture, (3) the stock price is an objective signal of how managers are performing, and (4) finance theory teaches that the goal of the manager should be to maximize the firm's stock price

2. Holding constant an asset's future benefit stream, what happens to the asset's price if its risk increases?

Holding future cash flows constant, the asset's price falls if risk rises because those future cash flows will be discounted at a higher rate.

3. Holding constant an asset's risk, what happens to the asset's price if its future benefit stream increases?

Holding risk constant, an increase in expected future cash flows will increase the asset's price today

4. Keeping in mind Equation 4.1, discuss how you determine the price per acre of farmland in a particular region.

The price of the land would depend on the cash flow generated by growing and selling crops. The price would depend on the crop yield, i.e., how much of a given type of crop could be harvested in one acre, the selling price of the crop, and the costs of producing the crop

5. How is a bond's *coupon rate* different from its *coupon yield*?

The coupon rate equals the annual coupon payment divided by par value. The coupon yield equals the annual coupon payment divided by the bond's market price

6. In general, when will a bond sell at a *discount*?

A bond sells at a discount when the bond's coupon rate is lower than the market's required rate of return on the bond.

7. Explain the meaning of the term "interest rate risk."

Interest rate risk refers to the possibility that a bond's price will change because the market's required return on that bond changes.

8. Why do bond prices and bond yields move in opposite directions?

The cash flows of ordinary bonds are contractually fixed. Thus, an increase in bond yields means that these cash flows are being discounted at a higher rate, resulting in a lower present value of price. The opposite is true if bond yields fall.

9: What sort of company would be one where the issuer risk and interest rate risks changes offset each other in their bond pricing?

Interest rates are usually the primary factor influencing bond prices, while the financial situation of the company is a secondary factor. A company in which the issuer risk and interest rate risks changes offset each other in their bond pricing would be particularly sensitive to variations in interest rates, i.e. would probably be highly leveraged.

10. What are the main types of issuers of bonds

Government, local authorities and corporations.

11. What is the difference between a *pure discount bond* and an ordinary bond that sells at a discount?

A pure discount bond makes no coupon payments, while an ordinary bond selling at a discount makes coupon payments that are below the market's required return

12. Explain who benefits from the option to *call* a bond, and who benefits from the option to *convert* a bond into shares.

The call option benefits the issuer because it allows them to repurchase bonds at a fixed price. Issuers are likely to exercise this option when interest rates have fallen. Issuers repurchase the bonds and then issue new ones at a lower interest rate. The option to convert bonds into common stock benefits bondholders. Once the stock price rises high enough, the value of the bonds starts to behave like the value of the stock. So convertible bonds offer investors some minimal level of return plus a lot of upside potential

13. Calculate a bond's yield to maturity using the *ask* price, then repeat the calculation using the bond's *bid* price. Which yield to maturity is higher?

Bond yields and prices are inversely related, so the lower the price, the higher the yield. The ask price is always higher than the bid price, so calculating the YTM using the bid produces a higher number than if you calculate the YTM using the ask

14. The price of a certain Treasury note is quoted as 98:10. What is the dollar price of this note if its par value is \$1,000?

The price is 98 10/32 percent of par value or \$983.125

15. Explain why the *yield spread* on corporate bonds versus Treasury bonds should always be positive.

Corporate bonds are riskier, so they must offer higher yields than Treasury bonds do. This means the yield spread is always positive. Municipal bonds are also riskier than Treasuries, but remember that interest on municipal bonds is exempt from federal income taxes. This means that the pre-tax return that investors will accept on municipal bonds is lower than the pre-tax return they would accept on equally risky corporate bonds. The municipal spread could be negative. As an example, suppose a 5-year Treasury bond offers a 4 percent yield-to-maturity. A corporate bond with a AAA rating might offer a 5 percent yield, for a spread of 100 basis points. Now consider a AAA rated municipal bond. If investors require a pre-tax return of 5 percent on AAA bonds, and if the personal income tax rate is 30 percent, then a municipal bond could offer a yield of 3.5 percent (5% \times (1 – 30%) and still be competitive with AAA corporate bonds. Notice that the yield spread on the municipal bond relative to the Treasury is negative 50 basis points

16. Explain why the height of the yield curve depends on inflation.

Investors are aware that inflation erodes the value of a fixed cash payment. As a result, when investors expect high inflation, they will require high returns on bonds. When inflation expectations are lower, investors will accept lower rates on bonds.

17. Suppose the government issues two 5-year bonds. One is an ordinary bond that offers a fixed nominal coupon rate of 4 percent. The other bond is an inflation-indexed bond When the TIPS bond is issued, will it have a coupon rate of 4 percent, more than 4 percent, or less than 4 percent?

TIPS provide protection against inflation. Because TIPS coupon payments rise with inflation, the coupon rate on TIPS is effectively fixed in real terms rather than in nominal terms. An ordinary bond offers a fixed nominal coupon rate, and this rate must be set high enough to convince investors that it also compensates them for inflation. Therefore, the coupon rate on an ordinary bond, which is expressed in nominal terms, must be higher than the coupon rate on a TIPS, which is expressed in real terms.

18: If the yield curve does act as a good predictor of future economic conditions, can the government use this as a tool to manage the economy?

In practice, central banks often use the yield curve, among other variables, to make economic forecasts and design appropriate monetary policy responses.