CH 12 Questions

**7.**

3 bonds, same default risk, mature in 10 years

1st: zero-coupon pays 1000 @ maturity w/ 8% YTM

2nd: $80 coupon payments yearly, 1000 @ maturity with YTM oy 8%

3rd: $100 coupon payments yearly

1. PV of all of them, using a financial calculator

1st: $463.19 2nd: $1000 3rd: $1134.20

1. 
2. 

**12.**



**14.**

The bond is selling below par. At a YTM higher than the current yield, it is expected that the bond will appreciate more than the markets are expecting for the bond to reach its par value, and therefore wil sell at a lower price.

**15.**

The coupon rate should be less than 9%. With some easy mathematics, we can rearrange formulas to prove this fact:

Therefore, looking above, since the current price of the bond is less than par value, the current coupon rate must be less than the current yield.

**17.**



**24.**

1. Bondholder has the power to extend the bond an additional 10 years; could be signs of a risk-averse company that may not have liquidity issues and therefore results in a lower price.

2. ABC has a larger debt offering, suggesting that the bonds will sell with more liquidity.

3. XYZ are callable bonds, meaning that ABC are relatively better for investors as they do not have the option of the bond issuers recalling the bonds at a later date, resulting in a lower price.

4. ABC have secured collateral rather than word of the company; in times of trouble, ABC bonds will be better to have than XYZ bonds.

**29.**

a) the YTM for the second bond should be equal to the coupon of 8.75% as the PV and FV of the bond are equal. The YTM on the par value bond is greater than that of the discount bond because the bond is underpriced by $0.56; the PV of a bond at 8.4% and 4% coupon is 580.56. Because the bond is slightly cheaper than it should be when taking into regards the supposed PV, the YTM can afford to be less than that of the bond issued at par value. Also, the effects of the periodic payments as well as the discount do not fully balance out the discount and therefore a lower YTM is understandable.

b) It is preferred to hold the greatly discounted bond as that bond has the greatest potential to grow. Because the call price was so much lower than the face value, falling interest rates can have the greatest upside potential for the holder of the discounted bond. The holder of the bond issued at par will lose out as the most he can receive from falling yield rates is 1050, the strike price.

c) The implicit call protection speaks to the fact that it is highly unlikely that the yield rates will fall enough for the issuer to call back the bond at 1050. The callable strike price is only a precaution and will most likely not be used.

**30.**

a) Current Yield = C/P = 70/960 = 7.29%

YTM = 8%

Realized Y = (960/(1000+226.39))^(1/6)-1 = 4.166 semiannually = 8.33 annually

b) current yield fails to capture capital gains and losses on bonds

YTM assumes that the bond is held to maturity

Realized compound yield is based off forecasts and can be altered easily to produce different outcomes

**32.**



**33.**

Price of Sentinel Bonds will rise to $107.11 whereas the price of Colina will rise to $107.02. If interest rates are expected to decline, it would be preferred to hold Sentinel bonds over Colina bonds as Colina bonds are callable, effectively setting a cap on the amount of gain they can receive, i.e. 2% capital gain (102/100). If rates are expected to rise by 1%, Sentinel is expected to be priced at 93.48 whereas Colina will be priced at 98.53, exhibiting very little difference between the two.

An increase in volatility of interest rates will affect both bonds as they will experience a depreciation. Increased volatility results in increased risk, and therefore, lower pricing of the bond as less investors would be willing to buy the bond. The Sentinel bond is still preferred over Colina as the callability of the Colina bonds makes them less desirable as they cap the capital gains possible on the bonds.

**36.**

a.iii b.ii c.iii d.ii e.iii f.iii g.ii h.iii i.iii j.iv k.iii l.i