

Tutorial 5

#1:

Bond X is a premium bond making annual payments. The bond pays an 8% coupon, has a YTM of 6% and has 13 years to maturity. Bond Y is a discount bond making annual payments. This bond pays a 6% coupon, has a YTM of 8%, and also has 13 years to maturity. If the interest rates remain unchanged, what do you expect the price of these bonds to be one year from now? In three years? In eight years? In 12 years? In 13 years? What's going on here? Illustrate your answers by graphing bond prices versus time to maturity.

#2:

Both Bond Sam and Bond Dave have 9 percent coupons, make semiannual payments, and are priced at par value. Bond Sam has 3 years to maturity, whereas Bond Dave has 20 years to maturity. If the interest rates suddenly rise by 2 percent, what is the percentage change in the price of Bond Sam? Of Bond Dave? If the rates were to suddenly fall by 2 percent instead, what would the percentage change in the price of Bond Sam be then? Of Bond Dave? Illustrate your answers by graphing bond prices versus YTM. What does this problem tell you about the interest rate risk of longer maturity bond?

#3:

Bond J is a 4 percent coupon bond; Bond K is a 12 percent coupon bond. Both bonds have nine years to maturity, make semiannual payments, and have a YTM of 8 percent. If interest rates suddenly rise by 2 percent, what is the percentage change of these bonds? What if rates suddenly fall by 2% instead? What does this problem tell you about the interest rate risk of lower-coupon bonds?

#4:

Suppose your company needs to raise \$30 million and you want to issue 30-year bonds for this purpose. Assume the required return on your bond issue will be 8 percent, and you're evaluating two issue alternatives: an 8 percent semi-annual coupon bond and a zero coupon bond. Your company's tax rate is 35 percent.

- a. How many of the coupon bonds would you need to issue to raise the \$30 million? How many of the zeros would you need to issue?
- b. At the end of the 30th year, what will your company's repayment be if you issue the coupon bonds? What if you issue the zeros?

#5:

@007 Corp wants to issue new 8-year bonds for some much-needed expansion projects. The company currently has 6.5 percent bonds on the market that sell for \$1,146.57, make semiannual payments, and mature in 8 years. What should the coupon rate be on the new bonds if the firm wants to sell them at par?