

MATH 2600/STAT 2600, Theory of Interest

FALL 2013

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Homework Sheet 4

Due: Thursday 7th November: 11:30 PM

1. Calculate the price that should be paid for each of the following bonds to obtain the desired yield:
  - (a) Face value \$100,000, maturing at par in 10 years, coupon rate  $j_2 = 4\%$ , desired yield  $j_2 = 5\%$ .
  - (b) Face value \$80,000, maturing at par in 10 years, coupon rate  $j_2 = 7\%$ , desired yield  $j_2 = 5\%$ .
2. At what interest rate would the two bonds in Question 1 have the same present value?
3.
  - (a) Write out a complete bond amortisation schedule for a bond with face value \$10,000 with coupon rate  $j_2 = 2\%$ , maturing at par in 5 years, sold to an investor who wishes to receive a yield of  $j_2 = 7\%$
  - (b) Write out a complete bond amortisation schedule for a bond with face value \$10,000 with coupon rate  $j_2 = 6\%$ , maturing at par in 5 years, sold to an investor who wishes to receive a yield of  $j_2 = 2.5\%$
4. A bond has face value \$20,000, maturity in 10 years, coupon rate  $j_2 = 4\%$ . After 2 years and 2 months, it is sold to Mr. Zack, who wishes to receive a yield of 6%. Calculate
  - (a) The flat price.
  - (b) The quoted price.
5. Mr. Allen buys a bond with face value \$6,000, maturing at par in 9 years, with coupon rate 2%, for a price to yield 4.7%. After two years, interest rates increase, and he sells the bond to an investor who wishes to receive a yield of 5.9%. What is Mr. Allen's rate of return?