

UNIVERSITY OF TEXAS AT AUSTIN

Quiz #6Bond pricing.

Please, provide your complete solutions to the following problems.

Problem 6.1. (5 points) *Source: Course 2, November 2001, Problem #31.*

You have decided to invest in two bonds. Bond X is an n -year bond with semiannual coupons, while bond Y is an accumulation bond redeemable in $n/2$ years. The desired yield rate is the same for both bonds. You also have the following information:

Bond X

- Par value is 1000.
- The ratio of the semiannual bond rate to the desired semiannual yield rate, $\frac{r}{i}$, is 1.03125.
- The present value of the redemption value is 381.50.

Bond Y

- Redemption value is the same as the redemption value of bond X.
- Price to yield an effective rate i per half year is 647.80.

What is the price of bond X?

Note: An "accumulation bond" is also known as a "zero-coupon" bond.

Problem 6.2. (5 points) *Source: Course 2, May 2001, Problem #41.*

Bill buys a 10-year, 1000 par value 6% bond with semiannual coupons. The price assumes a nominal yield of 6%, compounded semiannually. As Bill receives each coupon payment, he immediately puts the money into an account earning interest at an annual effective rate of i . At the end of 10 years, immediately after Bill receives the final coupon payment and the redemption value of the bond, Bill has earned an annual effective yield rate of 7% on the investment and the bond. Calculate i .

Problem 6.3. (5 points) *Source: SoA, May 1998, Problem #17.*

A 1000 par value 20-year bond with annual coupons and redeemable at maturity for 1050 is purchased for P to yield an annual effective interest rate of 8.25%. The first coupon is 75. Each subsequent coupon is 3% greater than the preceding coupon. Determine P .