

## Review Questions: Bond Valuation - Solutions

1. You want to determine the price of a 2-year bond, \$1000 par value, 8% coupon with semi-annual coupon payments (starting 6 months from today). It's now September 2010. You have only partial discount rate information, but you have supplemental Treasury-strip data available. This information is located in the table below, with the discount rates quoted as APRs with semi-annually compounding. What should be the price of this bond?

	APR	T-strip price
Oct. 2010	2.5%	
Jan. 2011	3%	
Mar. 2011		96:20
Aug. 2011		96:04
Sept. 2011		94:12
Jan. 2012		93:17
Mar. 2012	4.8%	
Aug. 2012	5%	
Sept. 2012	5.1%	

The CFs of the bond are:

September 2010	March 2011	September 2011	March 2012	September 2012
	40	40	40	1040

The PV (as of Sept. 2010) is:

$$PV = 40 \left( \frac{96 \frac{20}{32}}{100} \right) + 40 \left( \frac{94 \frac{12}{32}}{100} \right) + \frac{40}{\left(1 + \frac{0.048}{2}\right)^{2 \times 1.5}} + \frac{1040}{\left(1 + \frac{0.051}{2}\right)^{2 \times 2}}$$

$$PV = \$1,054.01$$

2. Estimate the YTM of this bond to within 0.1%. Explain your reasoning.

**A good estimate would be 5.0%. The yield curve is upward sloping, so you know that the YTM must be less than 5.1%. And since most of the weight is on the last CF (at 5.1%), you know that the YTM must be slightly under this. So a guess of 5.0% is reasonable.**