

If a question asks “why/explain”, you should give a full explanation that would convince a skeptic.

Name: \_\_\_\_\_  
(also write your name on the back)

**Finance 325: Quiz #2 – Solutions**  
October 14, 2010

1. It is now October 2010. You are looking to price a bond that matures in October 2013. The bond is \$1,000 par value, 8% coupon with annual coupon payments. The next coupon payment occurs in 1 year. You have the following discount rate and T-Strip data (located in the table below). The discount rates are quoted as APRs, compounded semi-annually. What is the price of the bond? (3 pts)

We have the following CFs from the bond:

Oct 10	Oct 11	Oct 12	Oct 13
	80	80	1080

	APR	T-strip
January 2011	3.7%	
April 2011	4.0%	
October 2011	4.2%	
June 2012		92:27
October 2012		91:04
December 2012		90:01
July 2013	5.0%	
October 2013	5.3%	

The price of the bond is:

$$PV = \frac{80}{\left(1 + \frac{0.042}{2}\right)^{2 \times 1}} + 80 \left( \frac{91 \frac{4}{32}}{100} \right) + \frac{1080}{\left(1 + \frac{0.053}{2}\right)^{2 \times 3}} = \$1,072.79$$

2. The WSJ, given the success of the weekend edition, is looking into starting its own monthly magazine. It will cost them \$80 million today and \$70 million next year to develop this magazine. The magazine will generate \$15 million in CFs per year into perpetuity starting in 3 years, but will decrease the CFs from the WSJ newspaper by \$3 million per year into perpetuity. If the discount rate is 8%, should the WSJ start the magazine? (4 pts)

The project has the following FCFs :

Today	1 yr	2	3	4	5	...
-80	-70		15 - 3 = 12	12	12	...

The NPV is the PV of these cash flows, with the \$70 million discounted back 1 year and the \$12 million/yr perpetuity discounted back 2 years:

$$NPV = -80 - \frac{70}{1.08} + \frac{12}{0.08} \left( \frac{1}{(1.08)^2} \right) = -16.21$$

So the WSJ should not do the magazine.

3. In finance, we measure cash flows when determining the value of an investment. Depreciation is not a cash flow, but we do not ignore depreciation when we calculate the free cash flows from an investment. Explain why we account for depreciation in our analysis. (3 pts)

**Depreciation is not a cash flow, but taxes are a cash flow. Because depreciation affects the amount of taxes that a firm pays, we must include the depreciation into our analysis in order to properly measure the tax cash flow. But once we have calculated the tax effect of depreciation, we add back the depreciation expense to reflect that depreciation itself is not a cash flow.**