

FIN-511 Chapter 9

- Major Topics:
- Valuation & Rates of Return
 - Bond Valuation
 - Bond Return Measures
 - Measuring Sensitivity

Valuation for Bonds (same as for equity)

- Book Value
 - Price of an asset minus accumulated depreciation
- Market Value
 - Price of an asset determined in the market
- Intrinsic Value
 - Present value of the expected cash flows from an asset
- To determine intrinsic value, must know:
 - Timing and size of the cash flows
 - Discount rate or required rate of return

Bond Valuation

- Bond Value

$$V_B = \text{Int} \left[\frac{1 - \frac{1}{(1+k_B)^N}}{k_B} \right] + \frac{MV}{(1+k_B)^N}$$
- Yield to Maturity
solve above equation for k (or YTM)
- Yield to Call
solve above for k (or YTC), but substitute call date and call price

Bond Valuation

- Total bond value includes accrued interest paid to previous owner of bond – Dirty Price
- Bond price net of accrued interest is how bond dealers quote – Clean Price

	A	B
1	Bond Valuation	
2	Time to Maturity (Periods)	39 2/3
3	Coupon Rate	8.00%
4	Required Return	9.00%
5	Frequency	2
6	Face Value	\$ 1,000
7		
8	Invoice Price - Dirty Price	\$ 921.41
9	Accrued Interest	13.33
10	Quoted Price - Clean Price	908.08

Financial Functions

- PRICE(settlement,maturity,rate,yld,redemption,frequency,basis)
- **Settlement** is the security's settlement date.
- **Maturity** is the security's maturity date.
- **Rate** is the security's annual coupon rate.
- **Yld** is the security's annual yield.
- **Redemption** is the security's redemption value per \$100 face value.
- **Frequency** is the number of coupon payments per year. For annual payments, frequency = 1; for semiannual, frequency = 2; for quarterly, frequency = 4.
- **Basis** is the type of day count basis to use. Where 0 = 30/360 and 3 = actual/365

Example

- A bond has the following terms:
February 15, 1991, settlement date
November 15, 1999, maturity date
5.75 percent semiannual coupon
6.50 percent yield
\$100 redemption value
Frequency is semiannual
30/360 basis
- The bond price (in the 1900 date system) is:
- PRICE("2/15/91","11/15/99",0.0575,0.065,100,2,0) equals 95.04287

Yield to Maturity

- **YIELD**(settlement,maturity,rate,pr,redemption,frequency,basis)
- **Settlement** is the security's settlement date.
- **Maturity** is the security's maturity date.
- **Rate** is the security's annual coupon rate.
- **Pr** is the security's price per \$100 face value.
- **Redemption** is the security's redemption value per \$100 face value.
- **Frequency** is the number of coupon payments per year. For annual payments, frequency = 1; for semiannual, frequency = 2; for quarterly, frequency = 4.
- **Basis** is the type of day count basis to use. Where 0 = 30/360 and 3 = actual/365

Bond YTM Example

- A bond has the following terms:
February 15, 1991, settlement date
November 15, 1999, maturity date
5.75 percent coupon
95.04287 price
\$100 redemption value
Frequency is semiannual
30/360 basis
- The bond yield (in the 1900 date system) is:
- **YIELD**("2/15/91","11/15/99",0.0575,95.04287,100,2,0) equals 0.065 or 6.5 percent

Rounding Up

- = **Roundup** (number, num_digits)
- **Number** is any real number that you want rounded up.
- **Num_digits** is the number of digits to which you want to round number.
- **ROUNDUP** behaves like **ROUND**, except that it always rounds a number up.
- If num_digits is greater than 0 (zero), then number is rounded up to the specified number of decimal places.
- If num_digits is 0, then number is rounded up to the nearest integer.
- If num_digits is less than 0, then number is rounded up to the left of the decimal point.
- =**ROUNDUP**(3.2,0)Rounds 3.2 up to zero decimal places (4)

Assignment:

- Do all of the work in the chapter, final result should look like Exhibits 9-2, 4, 7, 9 including the graphs on all of these. Include completed spreadsheets with all financial functions.
- Format exactly like in the text.
- Remember Columns/Rows/Gridlines
- Each person will turn in one set of information: print out of spreadsheet and print out of cell formulas
- Work is individual.
- Due at the beginning of class