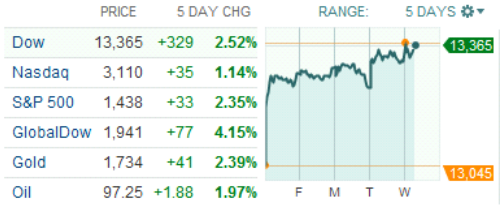
Financial Markets and Instruments - 9/12/12

Wednesday, September 12, 2012
11:30 AM



Screen clipping taken: 9/12/2012 11:32 AM

- Some people are not using banks at all (to avoid fees) (Page A1 of WSJ)
  - Uses a debit card from a "nonbank bank"
- Whistleblower from Swedish tax-fraud case against UBS awarded $104 million
- Exchanges plot fixes for their glitches
  - Ongoing problem with Knight capital
- Uncle Sam has an Inflation Deal for you
  - Important section to read everyday
- Some Funds Dip Toe back into Egypt
  - Things that happen around the world can have national effects

For next Wednesday's class, get into groups for the second midterm (preferably groups of 4) with 4-6 topics to write about

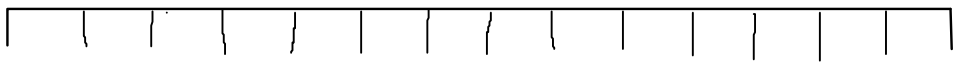
Chapter 3 - Interest Rates and Security Valuation

Class Example: (5% every 6 months)
7 year, 6% semi-annual coupon, FV $1000, 10% semi-annual interest

$$\frac{30}{(1+r)^{\frac{1}{2}}}+\frac{30}{(1+r)}+\frac{30}{(1+r)^{\frac{3}{2}}}+\frac{30}{(1+r)^{2}}+\frac{30}{(1+r)^{\frac{5}{2}}}+\frac{30}{(1+r)^{3}}+\frac{30}{(1+r)^{\frac{7}{2}}}+\cdots+\frac{1{,}030}{(1+r)^{7}}$$

r=.1025

$(1.05)^2 = 1.1025$
EAR = 10.25%



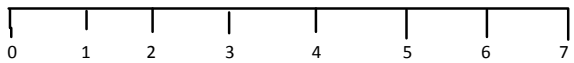
$$\frac{30}{(1.05)}+\frac{30}{(1.05)^{2}}+\frac{30}{(1.05)^{3}}+\frac{30}{(1.05)^{4}}+\frac{30}{(1.05)^{5}}+\frac{30}{(1.05)^{6}}+\frac{30}{(1.05)^{7}}+\frac{30}{(1.05)^{8}}+\frac{30}{(1.05)^{9}}+\frac{30}{(1.05)^{10}}+\cdots+\frac{1{,}030}{(1.05)^{14}}$$

ESR = 1.05%

n=14 FV = 1,000
PMT = 30 PV = 802.0271812
% = 5

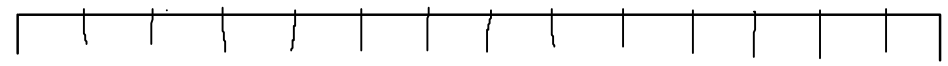
NEW PROBLEM

7 year, 6% semi-annual coupon, FV $1000, 10% EAR interest



$$\frac{30}{(1+r)^{\frac{1}{2}}}+\frac{30}{(1+r)}+\frac{30}{(1+r)^{\frac{3}{2}}}+\frac{30}{(1+r)^{2}}+\frac{30}{(1+r)^{\frac{5}{2}}}+\frac{30}{(1+r)^{3}}+\frac{30}{(1+r)^{\frac{7}{2}}}+\cdots+\frac{1{,}030}{(1+r)^{7}}$$

r=.10
EAR = 10%



$$\frac{30}{(1.0488)}+\frac{30}{(1.0488)^{2}}+\frac{30}{(1.0488)^{3}}+\frac{30}{(1.0488)^{4}}+\frac{30}{(1.0488)^{5}}+\frac{30}{(1.0488)^{6}}+\frac{30}{(1.0488)^{7}}+\frac{30}{(1.0488)^{8}}+\cdots+\frac{1{,}030}{(1.0488)^{14}}$$

Key Phrases:

- **Coupon rate**
  - periodic cash flow a bond issuer contractually promises to pay a bond holder
- **Required rate of return (r)**
  - rates used by individual market participants to calculate **fair present values (*PV*)**
- **Expected rate of return or *E(r)***
  - rates participants would earn by buying securities at **current market prices (*P*)**
- **Realized rate of return ($\bar{r}$)**
  - rate actually earned on investments

NEVER DIVIDE AN EFFECTIVE ANNUAL RATE

ESR = 4.88088488%

n=14 FV = 1,000
PMT = 30 PV = 802.0271812
% = 4.88088

$(1 + ESR)^2 = 1 + EAR$

Value of Stock:
$P_0 = \frac{Div_1}{r - g}$
(short version)

Growing Perpetuity
Growing Perp: $PV = \frac{C}{r-g}$
Growing Annuity: $PV = \frac{C}{r-g}(1 - \frac{1+g^N}{1+r})$

$a = \frac{C}{1+r}$ $x = \frac{1+g}{1+r}$

	0	1	2	3	4	5
PV=		$\frac{C}{1+r}$ +	$\frac{C(1+g)}{(1+r)^2}$ +	$\frac{C(1+g)^2}{(1+r)^3}$ +	$\frac{C(1+g)^3}{(1+r)^4}$ +	$\frac{C(1+g)^4}{(1+r)^5}$
PV =		a +	ax +	ax^2 +	ax^3 +	ax^4

PV = $\frac{a}{1-x} = \frac{\frac{C}{1+r}}{1-\frac{1+g}{1+r}}$