Formula for Exam 1

Future value: FV=P\*$(1+i)^{n}$

Present value

$PV =\frac{CF}{ (1+i)^{n} }$

***Fixed payment loan***

$LV=\frac{FP}{(1+i)}+\frac{FP}{\left(1+i\right)2}+\frac{FP}{\left(1+i\right)3}+… +\frac{FP}{\left(1+i\right)n}$=FP\*$\frac{1-(1+i)^{-n}}{i}$

$FP=$LV\*$\frac{i}{1-(1+i)^{-n}}$

Coupon bond

$$P=C\*\frac{1-(1+i)^{-n}}{i}+\frac{F}{\left(1+i\right)n}$$

$P\_{c}=\frac{C}{i\_{c}}\begin{array}{c}      \\             i\end{array}\_{c}=\frac{C}{P\_{c}}$

Current yield

*ic = C / P*

one year discount bond, yield to maturity

$$i=\frac{F-P}{P}$$

Inflation and interest rate

*i =ir* + π*e*

*ir* = *i* − π*e*

Return

$$R=\frac{C+P\_{t+1}-P\_{t}}{P\_{t}}$$

$$R=i\_{c}+g  $$

Expected Return

$$Re = p1R1+p2R2+…+pnRn$$

Standard Deviation

$$σ=\sqrt{p1(R1-Re)2+p2(R2-Re)2+…+pn(Rn-Re)2 }$$

Expectation Theory



Forward Rate

