Formula Sheet-Final Exam-2018.

* Price = (Zero-Coupon) = $PV = \frac{FV}{(1+i)^n}$.

* Expected price = Probability x price.

* Varian = Probability x (Price - Expected Price)^2.

* Standard Deviation = $\sqrt{\text{Probability} \times (\text{Price} \times \text{Expected Pri})^2}$

* Loan Value (LV) = $\frac{FP}{1+i} + \frac{FP}{(1+i)^2} + \frac{FP}{(1+i)^3} + \cdots - \frac{FP}{(1+i)^n}$.

* $PV = PMT \frac{\left[1 - \frac{1}{(1+i)^n}\right]}{i} + \frac{FV}{(1+i)^n}$.

* Real and nominal interest:

$$i = i_r + \Pi^e$$

* Return on Bond = $R = \frac{PMT + P_{t+1} - P_t}{P_t}$

$$R = i_c + g$$

* Duration = $\% \Delta P = -DUR \times \frac{\Delta i}{1+i}$

$$\text{Duration} = \sum_{t=1}^{n} t \frac{CP_t}{(1+i)^t} \Big/ \sum_{t=1}^{n} \frac{CP_t}{(1+i)^t}$$

★ Expected Return $= R^e = R_1P_1 + R_2P_2 + \cdots R_nP_n$.

★ $\text{Risk} = \sigma \sqrt{\sum_{i=1}^{n} P_i (R_i - R^e)^2}$.

★ Expectation Theory $= i_{nt} = \dfrac{i_t + i^e_{t+1} + i^e_{t+2} \cdots i^e_{t+(t-1)}}{n}$

★ Liquidity Theory $= i_{nt} = \dfrac{i_t + i^e_{t+1} + i^e_{t+2} \cdots i^e_{t+(t-1)}}{n} + l_{nt}$

★ Corporate Bond (1 − Tax Rate) = Municipal Bond

★ Required Rate = R_f + DRP + LP + MRP + inflation Premium

★ Required Reserve + Excess Reserves = Total Reserve

★ Effective rate $= \left(1 + \frac{i}{n}\right)^n - 1$

★ $PV = PM + \dfrac{\left[1 - \frac{1}{(1+i)^n}\right]}{i}$

* Net Asset Value (NAV) = $\frac{\text{Assets} - \text{Liabilities}}{\text{No. of outstanding shares}}$

$= \frac{\text{Net worth}}{\text{No. of Outstanding shares}}$

* $FV = PMT \frac{[(1+i)^n - 1]}{i}$

* $FV = PV(1+i)^n$.