

FINC201 Formula Sheet

$$PV = \frac{FV}{(1+r)^t} \quad FV = PV(1+r)^t \quad PV = \frac{C_1}{r} \quad PV = \frac{C_1}{r-g}$$

$$g = (ROE) \times (Plowbackratio) \quad \hat{r}(\text{expected} - \text{return}) = \frac{Div_1}{P_0} + g$$

$$\hat{r}(\text{expected} - \text{return}) = \frac{Div_1}{P_0} + \frac{P_1 - P_0}{P_0} \quad ROE = \frac{NI}{E}$$

$$PV_{annuity} = C \left(\frac{1}{r} - \frac{1}{r(1+r)^t} \right) \quad FV_{annuity} = C \left(\frac{(1+r)^t - 1}{r} \right)$$

$$PV_{annuity-due} = C \left(\frac{1}{r} - \frac{1}{r(1+r)^t} \right) (1+r) \quad PV_{growing-annuity} = \frac{C}{r-g} \left(1 - \left(\frac{1+g}{1+r} \right)^t \right)$$

$$PV = C \left(\frac{1}{r} - \frac{1}{r(1+r)^t} \right) + \frac{F}{(1+r)^t} \quad P_0 = \frac{Div_1}{r} \quad P_0 = \frac{Div_1}{r-g}$$

$$EAR = \left(1 + \frac{r}{m} \right)^m - 1 \quad P_0 = \frac{D_1}{(1+r)^1} + \frac{D_2}{(1+r)^2} + \frac{D_3}{(1+r)^3} + \dots + \frac{D_H + P_H}{(1+r)^H}$$

$$(1 + r_{nominal}) = (1 + r_{real})(1 + h) \quad A = B^n \Rightarrow \ln(A) = n * \ln(B)$$

$$NPV = C_0 + \frac{C_1}{(1+r)^1} + \frac{C_2}{(1+r)^2} + \dots + \frac{C_t}{(1+r)^t} \quad Profitability\ Index = \frac{NPV}{Investment}$$

$$C_0 + \frac{C_1}{(1+IRR)^1} + \frac{C_2}{(1+IRR)^2} + \dots + \frac{C_t}{(1+IRR)^t} = 0 \quad PV\ of\ outflows = \frac{FV\ of\ total\ inflows}{(1+MIRR)^t}$$

$$\beta_i = \frac{Cov(R_i, R_m)}{\sigma^2(R_m)} \quad or \quad \beta_i = \frac{\rho_{im}\sigma_i\sigma_m}{\sigma_m^2} \quad or \quad \beta_i = \frac{\rho_{im}\sigma_i}{\sigma_m}$$

$$OCF = CFAT = EBIT(1-t) + Depreciation \quad or \quad CFAT = OCF = EBITD(1-t) + t(Depreciation)$$

$$\hat{r} = \sum_{i=1}^n \frac{r_i}{n} \quad \hat{r} = P_1r_1 + P_2r_2 + \dots + P_nr_n = \sum_{i=1}^n P_i r_i$$

$$\sigma^2 = \sum_{i=1}^n (r_i - \hat{r})^2 P_i \quad Standard\ deviation = \sigma = \sqrt{\sigma^2} = \sqrt{\sum_{i=1}^n (r_i - \hat{r})^2 P_i}$$

$$EAA = \frac{PV\ of\ cash\ flows}{annuity\ factor}, \quad where \quad annuity\ factor = \left(\frac{1}{r} - \frac{1}{r(1+r)^t} \right)$$

FINC201 Formula Sheet

$$\hat{r}_{(portfolio)} = x_1r_1 + x_2r_2 + \dots + x_nr_n$$

$$\beta_{(portfolio)} = x_1\beta_1 + x_2\beta_2 + \dots + x_n\beta_n$$

$$\sigma_{(portfolio)}^2 = \sum_{i=1}^n \sum_{j=1}^n X_{ij}\sigma_{ij}$$

$$Variance_{(portfolio)} = x_1^2\sigma_1^2 + x_2^2\sigma_2^2 + 2(x_1x_2\rho_{12}\sigma_1\sigma_2)$$

$$\beta_p = \frac{Cov(R_p, R_m)}{\sigma^2(R_m)} \quad or$$

$$\beta_p = \frac{\rho_{pm}\sigma_p}{\sigma_m}$$

$$\sigma_{im} = \rho_{im}\sigma_i\sigma_m$$

$$r = r_f + \beta_i(r_m - r_f)$$

$$WACC = \frac{D}{V}(r_d(1-t)) + \frac{P}{V}r_p + \frac{E}{V}r_e$$

$$WACC = w_dr_d(1-t) + w_pr_p + w_er_e$$

$$Total\ assets\ turn\ over = \frac{sales}{total\ assets}$$

$$WC\ turnover = \frac{sales}{NWC}$$

$$Inventory\ period = \frac{inventory}{(annual\ COGS/365)}$$

$$Accounts\ receivable\ period = \frac{accounts\ receivable}{(annual\ sales/365)}$$

$$Accounts\ payable\ period = \frac{accounts\ payable}{annual\ COGS/365}$$

$$Inventory\ turnover = \frac{COGS}{inventory}$$

$$Profit\ margin = \frac{income}{sales}$$

$$r_e = r_a + \frac{D}{E}(r_a - r_d)$$

$$Distribution = NI - [(target\ equity\ ratio) \times (total\ capital\ budget)]$$

$$Accounts\ receivable = (daily\ sales) \times (average\ collection\ period)$$

$$p = \frac{PV(COST)}{PV(REV)}$$

$$Effective\ annual\ rate = \left(\left(1 + \frac{discount}{discounted\ price} \right)^{\frac{365}{extra\ day\ credit}} \right) - 1$$

$$Economic\ order\ size = Q = \sqrt{\frac{2 * sales * cost\ per\ order}{carrying\ cost}}$$

FINC201 Formula Sheet

$$ROE = \frac{\text{net income}}{\text{equity}} \quad \text{After tax operating income} = (1 - \text{tax rate}) * \text{interest expense} + \text{net income}$$

$$ROA = \frac{\text{after tax operating income}}{\text{total assets}}$$

$$ROC = \frac{\text{after tax operating income}}{\text{total capitalization}}$$

$$\text{Times interest earned} = \frac{EBIT}{\text{interest payments}}$$

$$\text{Cash coverage ratio} = \frac{EBIT + \text{depreciation}}{\text{interest payments}}$$

$$\text{Current ratio} = \frac{\text{current assets}}{\text{current liabilities}}$$

$$\text{Quick ratio} = \frac{\text{cash} + \text{marketable securities} + \text{receivables}}{\text{current liabilities}}$$

$$\text{Cash ratio} = \frac{\text{cash} + \text{marketable securities}}{\text{current liabilities}}$$

$$\text{Market to book ratio} = \frac{\text{market value of equity}}{\text{book value of equity}}$$

$$EVA = \text{after tax operating income} - (\text{cost of capital} * \text{total capitalization})$$

$$FCF = EBIT (1-t) + Dep - \text{New Cap Ex} - \text{Additional NWC}$$

$$FCF = NI + \text{Int} - \text{Int}(t) + Dep - \text{New Cap Ex} - \text{Additional NWC}$$

$$r_e = r_a + D/E (r_a - r_d)$$

$$r_e = r_a + D/E \times (1-T) \times (r_a - r_d)$$

$$P = 100 - [(m/12) \times d]$$