### FINC 3511 - Corporate Finance - Formulas

<table>
<thead>
<tr>
<th>Formula</th>
<th>Description</th>
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<tbody>
<tr>
<td>Net income = (EBIT - INT)(1 - tax rate)</td>
<td>Operating cash flow = NOPAT + Dep</td>
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<tr>
<td>NOPAT = EBIT(1 - tax rate)</td>
<td>Net cash flow = Net income + (Dep + Amort)</td>
</tr>
<tr>
<td>MVA = (shares outstanding)(stock price) - (total common equity)</td>
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<tr>
<td>EVA = EBIT(1 - tax rate) - (investor supplied capital)(percentage cost of capital)</td>
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<tr>
<td>Current assets = cash + marketable securities + inventory + accounts receivable</td>
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<tr>
<td>Current ratio = ( \frac{\text{current assets}}{\text{current liabilities}} )</td>
<td>Basic earning = ( \frac{\text{EBIT}}{\text{power}} )</td>
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<tr>
<td>Inventory turnover = ( \frac{\text{sales}}{\text{inventory}} )</td>
<td>Times interest = ( \frac{\text{EBIT}}{\text{earned}} )</td>
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<tr>
<td>Quick ratio = ( \frac{\text{current assets} - \text{inventory}}{\text{current liabilities}} )</td>
<td>Fixed asset = ( \frac{\text{Sales}}{\text{turnover}} )</td>
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<tr>
<td>Days sales outstanding = ( \frac{\text{receivables}}{(\text{annual sales}/365)} )</td>
<td>EBITDA Coverage = ( \frac{\text{EBITDA} + \text{Lease Payments}}{\text{Ratio}} )</td>
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<tr>
<td>Debt ratio = ( \frac{\text{total debt}}{\text{total assets}} )</td>
<td>Total asset = ( \frac{\text{Sales}}{\text{Turnover}} )</td>
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<tr>
<td>Net profit margin = ( \frac{\text{Net income}}{\text{sales}} )</td>
<td>Price earnings ratio = ( \frac{\text{Price per share}}{\text{Earnings per share}} )</td>
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<tr>
<td>Market/Book ratio = ( \frac{\text{Market price per share}}{\text{Book price per share}} )</td>
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<tr>
<td>Return on total assets = ( \frac{\text{Net income}}{\text{Total assets}} )</td>
<td>= (Net profit margin)(Total asset turnover)</td>
</tr>
<tr>
<td>Return on common equity = ( \frac{\text{Net income}}{\text{common equity}} )</td>
<td>= (net profit margin)(total asset turnover)(1/(1 – debt ratio))</td>
</tr>
<tr>
<td>projected account balance = (old account balance)[(new sales)/(old sales)]</td>
<td></td>
</tr>
<tr>
<td>Change in retained earnings = (net profit margin)(sales) – dividends</td>
<td></td>
</tr>
<tr>
<td>Additional funds needed = projected assets – (projected liabilities + projected equity)</td>
<td></td>
</tr>
</tbody>
</table>
\[
\hat{k}_i = \sum_{i=1}^{n} k p_i \\
\hat{k}_p = \sum_{i=1}^{n} w_i \hat{k}_i \\
b_p = \sum_{i=1}^{n} w_i b_i \\
k_i = k_{RF} + b_i (k_M - k_{RF})
\]

\[
FV_n = PV \left(1 + \frac{i}{m}\right)^{mn}
\]

\[
PV = FV_n \left(1 + \frac{i}{m}\right)^{-mn}
\]

\[
FVA_n = PMT \sum_{i=1}^{n} (1 + i)^{n-1}
\]

\[
PVA_n = PMT \sum_{i=1}^{n} \left(\frac{1}{(1+i)^t}\right)
\]

\[
EAR = \left(1 + \frac{i}{m}\right)^m
\]

\[
V_B = \frac{\text{INT}}{m} \sum_{t=1}^{N^m} \left(\frac{1}{1 + k_b}ight)^t + M \left[\frac{1}{1 + k_b}ight]^{N^m}
\]

\[
V_p = \frac{D}{k_p}
\]

Current yield = (annual interest payment)/(current price)

Yield-to-maturity = current yield + capital gain/loss

\[
\hat{P}_0 = \frac{D_0 (1 + g)}{k_s - g} = \frac{D_1}{k_s - g}
\]

\[
\hat{P}_0 = \sum_{t=1}^{Ns} D_0 (1 + g_s)^t + \frac{D_{Ns} (1 + g_c)}{k_s - g_c}
\]

\[
(V_B - FC) = \text{INT} \sum_{t=1}^{N} \left(\frac{1}{1 + k_B^B}\right)^t + M \left[\frac{1}{1 + k_B^B}\right]^N
\]

\[
(V_B - FC) = \frac{D}{k_{ps}}
\]

\[
(\hat{P}_0 - FC) = \frac{D_1}{k_s - g}
\]

WACC = \[w_d k_d^d (1 - t) + w_o k_{ps} + w_s k_s\]

Breakpoint = \[
\frac{\text{total dollar amount of retained earnings available}}{\text{fraction of equity in the capital structure}}
\]

\[
\text{NPV} = \sum_{t=1}^{n} \frac{CF_t}{(1+k)^t} - IO
\]

\[
\text{IO} = \sum_{t=1}^{n} \frac{CF_t}{(1+\text{IRR})^t}
\]

\[
\sum_{t=0}^{n} \frac{\text{COF}_t}{(1+k)^t} = \sum_{t=0}^{n} \frac{\text{CIF}_t (1+k)^{n-t}}{(1+\text{MIRR})^n}
\]