

Selected Ratios and Definitions

Current Ratio = Current Assets / Current Liabilities;

Quick Ratio = (Current Assets - Inventory) / Current Liabilities;

Debt-to-Asset Ratio = Total Debt / Total Assets;

Debt-to-Equity = Total Debt / Total Equity;

Equity Multiplier = Total Assets / Total Equity;

Times Interest Earned = EBIT / Interest Payment;

Inventory Turnover = COGS / Inventory; or, Sales/Average Inventory if COGS data is not available;

Average Age of Inventory = 365 / Inventory Turnover = 365 / (Sales / Inventory);

Receivables Turnover = Annual Sales / Accounts Receivables;

Average Collection Period = 365 / Receivables Turnover = 365 / (Sales / Accounts Receivables);

Total Assets Turnover = Sales / Total Assets;

Net Profit Margin = Net Income / Sales;

ROA = Net Income / Total Assets = total asset turnover * net profit margin;

ROE = Net Income / Equity = ROA * Equity Multiplier = ROA * Total Assets / Equity;

ROE = total asset turnover * net profit margin * equity multiplier;

EPS = Net Income / Number of Common Shares Outstanding;

P/E Ratio = Market Price per Share / EPS;

Market-to-Book Ratio = Market Price per Share / Book Value per Share;

Dividend Payout Ratio (DPR) = Dividends / Net Income;

Retention Ratio = 1 - Dividend Payout Ratio;

Net Cash Flow = Net Income + Depreciation;

Operating Cash Flow (OCF) = Earnings before Interest and Taxes + Depreciation - Tax;

Dividend Yield = Dividend per Share / Stock Price = D_1 / P_0

Capital Gains = (Price Next Period / Price today) - 1 = $(P_1 / P_0) - 1$

Holding Period Return: HPR = $D_1/P_0 + (P_1/P_0 - 1)$

Value of a perpetuity: $P = D / k$ where D is the perpetual cash flow and k is the discount rate

Constant Growth Model: $P_0 = D_1 / (k - g)$ where D_1 is the dividend next period, k is the discount rate and g is the growth rate in dividend.

Bond Valuation Formula: $P_0 = \text{PV of Coupon Annuity} + \text{PV of Face Value (Par) of Bond}$.

Single Cash Flow Present Value Formula: $PV_0 = CF_t / (1 + r)^t$

Single Cash Flow Future Value Formula: $FV_t = CF_0 * (1 + r)^t$

Present Value of an Annuity: $PV_0 = \frac{PMT}{r} \left[1 - \frac{1}{(1 + r)^N} \right]$

Future Value of an Annuity: $FV_N = \frac{PMT}{r} \left[(1 + r)^N - 1 \right]$

Security Market Line, SML or CAPM formula: $r_i = r_{RF} + \beta_i \times (r_M - r_{RF})$

Calculator Use

- Use of a calculator is recommended.
- Students are allowed to use HP-10B; TI-BA II; or any four function calculators
- Students are not allowed to use any other calculators including
 - Graphing or Programmable calculators
 - iPhones with HP-10B or other emulators