Corporate Finance[1]
Quick Sheet[2]

EBIT = Earnings before interest and taxes

EBIT is often referred to as Operating Income

EBITDA = Earnings before interest, taxes, depreciation and amortization

$CFFA_1$ = OCF – NCS - ΔNWC

OCF = EBIT + Depreciation & Amortization – Taxes

NCS = FA_1 – FA_0 + Depreciation & Amortization

ΔNWC = (CA_1-CL_1)-(CA_0-CL_0)

$CFFA_1$ = $CFFA_2$ = CF_{CR} + CF_{SH}

CF_{CR} = Interest Paid – Net New Borrowing

CF_{SH} = Dividends Paid – Net New Equity

NOPAT = Net Operating Profit Less Taxes = EBIT – Taxes Paid

NOPLAT = Net Operating Profits Less Adjusted Taxes = $EBIT * (1 - T)$

T is equal to the tax rate on the firm's EBIT were it to be subjected to tax

NI = EBIT – Interest - Taxes

RE = Retained Earnings = Net Income – Dividends Paid

The term "Sales" in finance is often used to represent total income or total revenue

PM = Profit Margin = $\frac{Net\ Income}{Sales}$

TIE = Times Interest Earned = $\frac{EBIT}{Interest\ Expense}$

CR = Current Ratio = $\frac{Current\ Assets}{Current\ Liabilities}$

QR = Quick Ratio = $\frac{Cash\ and\ Equivilants}{Current\ Liabilities}$

LTE = Liabilities to Shareholder Equity = $\frac{Total\ Liabilities}{Shareholder\ Equity}$

TA = Total Assets = Current Assets + Fixed Assets *(the entirety of the left hand side of the balance sheet)*

TE = Total Equity = Book Value of All Outstanding Equity Shares + Retained Earnings

TAT= Total Asset Turns = $\frac{Sales}{TA}$

EM = Equity Multiplier = $\frac{TA}{TE}$

DE = Debt to Equity ratio = $\frac{TD}{TE} = 1 - EM$

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[1] The Corporate Finance Quick Sheet is intended to present an abbreviated presentation of the included concepts in corporate finance and is not intended to be a full or complete representation of the concepts, models, metrics or the underlying foundations from which they are built.

[2] This material set was provided by Richard Haskell, PhD, Associate Professor of Finance, Bill and Vieve Gore School of Business, Westminster College, Salt Lake City, Utah (2017), rhaskell@westminstercollege.edu.

ROA = Return on Assets = $\frac{NI}{TA}$

ROE = Return on Equity = $\frac{NI}{TE}$

Equity Turns = $\frac{Sales}{TE}$

Equity Ratio = $\frac{TE}{TA}$

ROE_{DUPONT} = Dupont Identity = **PM * TAT * EM** = $\frac{NI}{Sales} x \frac{Sales}{TA} x \frac{TA}{TE}$

ROA_{DUPONT} = Dupont Identity = **PM * Equity Turns * Equity Ratio** = $\frac{NI}{Sales} x \frac{Sales}{TE} x \frac{TE}{TA}$

b = Retention Ratio = $\frac{\text{NI} - \text{Dividends}}{\text{NI}} = \frac{\text{EPS} - \text{DPS}}{\text{EPS}}$

1-b = Payout Ratio = $\frac{\text{Dividends}}{\text{NI}} = \frac{\text{DPS}}{\text{EPS}}$

SGR = Sustainable Growth Rate = $\frac{ROE\ x\ b}{1-(ROE\ x\ b)}$

IGR = $\frac{ROA\ x\ b}{1-(ROA\ x\ b)}$

Net Inv = Net Investment = Δ IC = $IC_1 - IC_0$

= Δ FA + Δ NWC

= NCS + Δ NWC – Dep

NCS = Net Capital Spending = $FA_1 - FA_0 + Dep$

IR = Investment Rate = $\frac{Net\ Investment}{NOPLAT}$

IC = Invested Capital = $Fixed\ Assets + Net\ Working\ Capital$ *Operations approach*

= $Total\ Equity + Total\ Long\ Term\ Debt$ *Financing approach*

ROIC = Return on Invested Capital = $\frac{NOPLAT}{IC}$

g = growth rate of the subject cash flow variable

$$g = \frac{Cash\ Flow\ Variable_{END} - Cash\ Flow\ Variable_{BEGINNING}}{Year_{END} - Year_{BEGINNING}}$$

g = IR x ROIC - when ***g*** is calculated in this manner it is not likely to be the same as the g calculated above. This form of g is the level of growth the firm should be able to sustain given its current level of ROIC, investment rate, and capitalization.

FCF = Free Cash Flow

FCF = $NOPLAT + Depreciation - \Delta NWC - NCS$

FCF = $NOPLAT - Net\ Investment$

These two versions of FCF should result in the same value

FCF = $NOPLAT\ \left(1 - \frac{g}{ROIC}\right)$ *Often yields a different value than those above.*

EV = Enterprise Value = Mkt Cap Common + Mkt Cap Preferred + Mkt Value Long-Term Debt – Cash & Equivalents

- when market value of long-term debt is not available, book value is often substituted

WACC = Weighted Average Cost of Capital = $\left(\frac{E}{V}\ x\ R_E\right)\ +\ \left(\frac{P}{V}\ x\ R_P\right)\ +\ \left(\frac{D}{V}\ x\ R_D\right)(1-T_C)$

$E+P+D=V$ Values of firm's capital structure. Depending on the perspective of the analysis you're conducting, this might be book value based or market value based.

Opportunity cost of Debt (R_D)

1) R_D = YTM or Current Yield for a similar type (maturity, risk, etc) of long term debt to that held by the subject firm
2) $R_D = \frac{Interest_t}{Debt_{t-1}}$: this may reflect market or book value of debt depending on the data available

Opportunity cost of Preferred Equity (R_P)

1) $R_P = \frac{Preferrred\ Dividends\ Paid_t}{Value\ of\ Preferred_1}$: this may reflect market or book value or preferred depending on the data available
2) R_P = Dividend Rate of Preferred

Opportunity cost of Common Equity (R_E)

1) $R_E = R_F + \beta(R_M - R_F)$ This is the CAPM construction and is preferred if the data is available
2) $R_E = \frac{D_1}{P_0} + g$: this stems from the Dividend Yield equation $P_o = \frac{D_1}{r-g}$ in which Modigliani & Miller suggest that if D_1 is the dividend for a common stock, the P0 is the current price of that stock based on the stock's expected return (r) and long run growth rate of the dividend (g) – as such r, or RE, is the opportunity cost of the common stock.

CAPM - Capital Asset Pricing Model : $R_E = R_F + \beta(R_M - R_F)$

R_F = risk free market return; this value may be a current 2 or 10 year US Treasury rate
R_M = average market return for equity for industry in which the subject firm resides
β = risk adjustment for firm compared to the industry average for the firm such that β = 1 indicates firm risk/volatility level is equal to that of the average firm in the industry

Market Value Bonds = $\boldsymbol{C\ \frac{\left[1-\frac{1}{(1+YTM)^N}\right]}{YTM}+\frac{F}{(1+YTM)^N}}$

$C = \frac{F * Coupon\ Rate}{Periods\ per\ year}$

$F\ =\ Face\ Value$

$YTM = \frac{Current\ Market\ Yield}{Periods\ per\ year}$

$N = Years\ to\ Maturity\ x\ \ Periods\ Per\ Year =$ Periods to Maturity