IS2218 Accounting + Financial Statement Analysis — Formula Cheatsheet

CA/CL current assets/liabilities · NI net income · RE retained earnings · Dep depreciation · TI taxable income (EBT) · I interest · AR/AP receivables/payables · Inv inventory · OCA/OCL other operating current assets/liabilities · NFA net fixed assets · CapEx capital expenditure · τ tax rate · k cost of capital · Δ change

Balance sheet & roll-forwards

Assets = Liabilities + Equity.

Net working capital: NWC = CA − CL.

Change in NWC: ΔNWC = NWC_end − NWC_start.

Retained earnings: RE_end = RE_start + NI − Dividends.

NI = ΔEquity + Dividends (if no stock issues/buybacks).

Net fixed assets: NFA = Gross PP&E − Accumulated Dep.

NFA_end = NFA_start + CapEx − Dep.

CapEx = ΔNFA + Dep (no disposals).

Debt_end = Debt_start + New debt − Debt repaid.

Market assets = Market debt + Market equity.

Common-size balance-sheet item % = Item / Total assets × 100%.

Income statement

EBIT = Revenue + Other income − Costs − Dep.

Taxable income: TI = EBIT − I.

Taxes = τ × TI (flat rate).

Net income: NI = TI − Taxes.

NI = (EBIT − I)(1 − τ) (flat rate).

Addition to RE = NI − Dividends.

Common-size income-statement item % = Item / Sales × 100%.

All-equity case

All-equity taxable income: TI_AE = TI + I.

All-equity net income: NI_AE = NI + I(1 − τ).

All-equity FCF: FCF_AE = NI_AE + Dep − ΔONWC − CapEx.

Operating & total cash flow

Operating NWC: ONWC = Non-cash CA − Non-debt CL.

ONWC = (CA − Cash) − (CL − ST debt).

ΔONWC = ΔAR + ΔInv + ΔOCA − ΔAP − ΔOCL.

Operating cash flow: CFO = NI + Dep − ΔONWC.

Investing cash flow: CFI = −CapEx + Asset sales − Acquisitions ± Other investing.

Financing cash flow: CFF = ΔDebt + Stock issued − Dividends − Buybacks ± Other financing.

Net change in cash: ΔCash = CFO + CFI + CFF.

Free cash flow (FCF)

FCF = NI + I + Dep − ΔONWC + CFI (signed CFI).

FCF = NI + I + Dep − ΔONWC − CapEx (if CFI = −CapEx).

FCF = I + CFO + CFI (signed CFI).

Taxes & losses

Interest tax shield = I × τ.

Depreciation tax shield = ΔDep × τ (if tax Dep changes).

Progressive personal tax = Σ(BI_i × rate_i).

Bracket income: BI_i = max(0, min(Y, U_i) − L_i).

Average tax rate = Total tax / Total income.

Marginal tax rate = rate on the next dollar.

Usable loss carryforward = min(Loss CF, 80% × Future TI).

TI_after loss = Future TI − Usable loss carryforward.

Market value & value creation

Market capitalization (market equity) = Shares outstanding × Price per share.

Market value added: MVA = Market capitalization − Book equity.

Market-to-book = Market capitalization / Book equity = Price / Book value per share.

Book value per share = Book equity / Shares outstanding.

Percent value created = MVA / Book equity × 100% = (Market-to-book − 1) × 100%.

ATOI, capitalization & EVA

After-tax operating income: ATOI = NI + I(1 − τ) = EBIT(1 − τ).

Total capitalization (Cap) = Long-term debt + Shareholders' equity.

Economic value added: EVA = ATOI − k × Cap_start (if start requested).

EVA = Cap × (ROC − k) (use same capital base).

Returns & margins

Return on assets: ROA = ATOI / Total assets.

Return on capital: ROC = ATOI / (Long-term debt + Equity) = ATOI / Cap.

Return on equity: ROE = NI / Equity.

Profit margin = NI / Sales.

Operating profit margin = ATOI / Sales.

DuPont identities

DuPont ROA: ROA = (Sales / Assets) × (ATOI / Sales).

Four-factor ROE = (Assets / Equity) × (Sales / Assets) × (ATOI / Sales) × (NI / ATOI).

Leverage ratio = Total assets / Equity (equity multiplier).

Debt burden = NI / ATOI.

Efficiency & operating-cycle ratios

Asset turnover = Sales / Assets_start (or average if asked).

Receivables turnover = Sales / AR_start.

Inventory turnover = COGS / Inv_start.

Average collection period = AR_start / (Sales / 365) = 365 / Receivables turnover.

Days in inventory = Inv_start / (COGS / 365) = 365 / Inventory turnover.

Payment delay = AP_start / (COGS / 365).

Average balance = (Start + End) / 2 (if requested).

Financial leverage & coverage

Long-term debt ratio = LT debt / (LT debt + Equity).

Long-term debt-equity ratio (D/E) = LT debt / Equity.

Debt-to-equity (Geomorph) = Total liabilities / Equity.

Total debt ratio = Total liabilities / Total assets.

Times interest earned (TIE) = EBIT / Interest payments.

Cash coverage = (EBIT + Dep) / Interest payments.

Liquidity

NWC / assets = (CA − CL) / Total assets.

Current ratio = CA / CL.

Quick ratio = (Cash + Marketable securities + AR) / CL.

Cash ratio = (Cash + Marketable securities) / CL.