ACCOUNTING FORMULAS

- **EBIT (operating profit)** = total revenues – raw materials used – cost of personnel – D&A – other operating expenses
- **EBIT** = CFFO – D&A + Δ (NWC) + income taxes paid + interest paid **EBIT = Revenues - op.Ex - D&A**
- **EBIT** = EBT + Financial Expenses – Financial Income/ financial revenues
- **EBIT** = EBT + net financial interests
- **EBIT** = net profit + income taxes + net financial expenses
- **EBIT** = gross profit – sell. and gen. administrative expenses – other operating expenses + other operating income – D&A – IMPAIRMENT
- **EBIT** = revenues * EBIT margin
- **EBIT MARGIN % (ROS)** = EBIT / Revenues

- EBT = net profit + income taxes
- EBT= EBIT – Financial Exp + Financial Inc

- **NET PROFIT** = EBT –Taxes ON EBT
- **NET PROFIT** = equity – reserves – share capital (nominal value* issued shares)
- **NET PROFIT** = revenues * net profit margin
- **NET PROFIT** = EBT * (1- effective or corporate tax rate)
- **NET PROFIT MARGIN %** = Net profit / Revenues

- **ΔNWC** = + Δinventories + Δreceivables - Δpayables

- **GROSS PROFIT** = EBIT + Operating Expenses
- **GROSS PROFIT** = EBIT + Selling and general administrative expenses – other operating income
- **GROSS PROFIT** = EBIT + Selling and General Administrative Expenses + Other operating Expenses – Other Operating Income
- **GROSS PROFIT** = EBIT – Other operating income + R&D expenses + Selling and Administrative Expenses + Other operating expenses
- **GROSS PROFIT** = revenues – cost of sales

GP = PERIOD COSTS + EBIT

- **EBITDA** = EBIT + D&A
- **EBITDA** = EBIT + D&A + Impairment of goodwill
- **EBITDA** = Revenues – Operating costs + D & A
- **EBITDA** = Revenues * EBITDA margin
- **EBITDA** = Revenues – operating expenses + Δinventories (f-i)
- **EBITDA margin** = (EBIT + D & A) / revenues

- **TAX RATE** = Income taxes/ EBT
- **TAXES** = EBT * Effective tax rate
- **EFFECTIVE TAX RATE %** = Taxes / Pre-tax profit

- **REVENUES** = EBIT + cost of sales + other operating expenses + general administrative expenses
- **REVENUES** = gross profit + cost of sales
- **REVENUES (SALES)** = EBIT + period costs + cost of goods sold
- **REVENUES** = total assets * assets turnover ratio
- **TOTAL REVENUES** = revenues + other operating income + changes in inventories of finished goods (f - i)

REV = EBIT + OP. COSTS

- **ROE (return to equity)** = Net Profit / shareholders' equity
- **ROE** = [ROI + Liabilities/Equity * (ROI - r)] *s, where **s** = **net profit/ EBT**

- **ROI (RETURN ON INVESTED CAPITAL) %** = EBIT / (total assets – nonfinancial liabilities)
- **ROI** = EBIT / (Equity + financial liabilities – nonfinancial liabilities)

- **ROA (RETURN ON ASSETS) %** = EBIT / Total Assets
- **ROA** = EBIT margin (ROS) * Asset turnover ratio

- **NET CFFO** = EBIT + D & A + impairment – ΔNWC – interest paid – income taxes paid
- **CFFO** = EBIT * quality of operating earnings

- **DPO (DAYS PAYABLE OUTSTANDING)** = (Payables / Cost of goods sold) * 365
- **DSO (DAYS SALES OUTSTANDING)** = (Receivables/Revenues) * 365
- **RECEIVABLES** = current assets – inventories – cash and cash equivalents – current financial assets
- **TRADE PAYABLES** = Current liabilities – current financial liabilities – other current non-financial liabilities
- **CURRENT ASSETS** = current ratio * current liabilities
- **CURRENT RATIO %** = Current Assets / Current liabilities
- **CURRENT LIABILITIES** = current financial liabilities + current non-financial liabilities (es : trade payables)
- **NOT FOR PROFIT (NFP)** = financial liabilities (current+ noncurrent) - cash and cash equivalents
- **D & A** = revenues – operating expenses + Δinventories (f-i)
- **ΔCAPEX** = Δnon-current assets + D&A
- **RAW MATERIALS USED** = purchase of raw materials – Δinventories of raw material
- **NET FINANCIAL EXPENSES** = financial expenses – financial revenues
- **COGS (purchases it can be of raw materials)** = Revenues – EBIT – period costs

Revenues
– Variable costs
– Personnel
– Other fixed costs
(impairment)
– D&A
EBIT
– Taxes on EBIT
NET EBIT
+ D&A
– Inventory raw material
– inventory finished goods
– account receivables
+ account payables
CFFO
– CAPEX

EBIT
– Taxes on EBIT
+ D & A
– Δ NWC
– Δ CAPEX
FCFF
+ financial interests (net of taxes)
– financial expenses (net of taxes)
+ Δ Debt (increase of debt – repayment of debt)
– Dividends paid
+ Δ Share capital
FCFE

EBIT	
- Taxes (on EBIT) = - t_c * EBIT	
+ Depreciation & Amortization	*Cash from operations and investments*
- Δ Net Working Capital	
- Δ Capital expenditures (Capex)	
= Free Cash Flow to Firm (FFCF)	
+ Cash flows from financial revenues, net of tax	
- Cash flows for financial expenses, net of tax	*Cash from financial activities*
+ Δ Share capital	
- Dividends	
+ Δ Debt (Increase of debt - repayment of debt)	
= Free Cash Flow to Equity (FCFE)	

- **$DIVIDENDS_t$** = Payout $ratio_t$ * Net $Profit_{t-1}$

- **FCFF** = EBIT + D&A – Taxes on EBIT - ΔNWC (- Δinventories - Δreceivables + Δpayables) - ΔCAPEX
- ΔCAPEX = EBIT + D&A – Taxes on EBIT - ΔNWC - FCFF
- **ΔNWC_t** = ($recevables_t$ – $recevables_{t-1}$) – ($payables_t$ – $payables_{t-1}$) + ($inventories_t$ – $inventories_{t-1}$)

EQUITY VALUE = $\sum FCFE_{actualized} + TV_{actualized}$

- $FCFE_{actualized} = FCFF_t / (1+ke)^t$
- $TV_{actualized} = TV_e / (1+ke)^{total\ years}$

CAPEX = PPE(t) - PPE(t-1) + D&A(t)

CAPEX = non current assets (f-i) + D&A(f)

$$ROE = s\left(ROA + \frac{D}{E}(ROA - r)\right)$$

- **FINANCIAL LEVEREGE** = D/E
- **EQUITY** = TOTAL ASSETS – TOTAL DEBT (LIABILITY)
- **TOTAL ASSET** = revenues/ ATR
- **WACC** = $ke\left(\frac{E}{E+D}\right) + Kd(1 - Tc)\left(\frac{D}{E+D}\right)$

Equity = share capital + reserves+ net profit

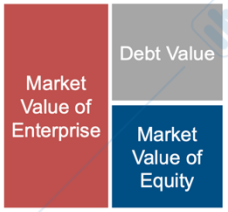
share capital = nominal value of shares * #shares issued

Equity = shareholder's equity + new capital issued

- **(1- Tc)** = $\frac{\left[WACC - ke\left(\frac{E}{E+D}\right)\right]}{Kd\left(\frac{D}{E+D}\right)}$
- **BETA LEVERED (β_L)** = $\frac{(ke - rf)}{(rm - rf)}$ r_f = risk free rate & $(r_m - r_f)$ = market premium
- **r_m** = $\frac{(ke - rf)}{\beta_L} + rf$
- **BETA UNLEVERED (β_U)** = $\frac{\beta_L}{\left[1+(1-Tc)\left(\frac{D}{E}\right)\right]}$
- **Ke** = $\beta_L(rm - rf) + rf$
- **Ke** = $\left[WACC - Kd\left(\frac{D}{E+D}\right)(1 - Tc)\right] / \left(\frac{E}{E+D}\right)$
- **Kd (cost of debt/financial liabilities)** = financial (or interest) expenses/ Debt (financial liabilities)
- **Financial liabilities** = current + non-current bonds and bank debts
- **INTEREST COVERAGE RATIO (%)** = Interest Expenses / Debt with explicit interest rate
- **INTEREST EXPENSES** = EBIT / ICR

- **EV (ENTERPRISE VALUE)** = E + NFP
- **EV** = multiple * parameter
- **NFP (NET FINANCIAL POSITION)** = debt – cash
- **E (MARKET CAPITALIZATION)** = EV – (DEBT- CASH)
- **EQUITY VALUE (E)** = N° outstanding shares * price of the shares
- **EARNING PER SHARE (EPS)** = Net profit / Common shares
- **N° OF SHARES** = price / net profit
- **EARNINGS GROWTH (g)** = $(EPS_t - EPS_{t-1})/(EPS_{t-1})$
- **PRICE** = ΔP/E * EPS
- **P/E** = Market Capitalization / Net Profit
- **PEG** = P/E / Earnings growth
- **P/E (D) > P/E (F) BUT PEG(D) < PEG (F)**

Asset side:
- EVEBITDA
- EV/EBIT
- EV/FCFF
- EV/sales



Equity side:
- P/E
- PEG
- P/FCFE
- P/BV

Sector	Multiple	Explanation
Retailing	EV/sale	Focus is usually on store sales
High-tech	PEG	Growth is usually the dominant theme
Infrastructure	EV/ EBITDA	Reported earnings can vary depending on depreciation method
Real estate	P/CF	Restrictions on investment policy and large depreciation charges make cashflows better measure than equity earnings

- **(EV/EBITDA) C** (in the bullet points) = (EV/EBITDA)A + (EV/EBITDA)B - Δ(EV/EBITDA A&B)
- **ASSET SIDE → TERMINAL VALUE (TV_{EV})** = $\frac{FCFF(1+Growth\ rate)}{WACC - Growth\ rate}$ → perpetuity with growth
- → **ENTERPRISE VALUE (EV_0)** = $\sum_{t=0}^{T} \frac{FCFF(t)}{(1+WACC)^t} + \left(\frac{TV}{(1+WACC)^T}\right)$ → DCF method
- **EQUITY SIDE → TERMINAL VALUE (TV_E)** = $\frac{FCFE(1+Growth\ rate)}{Ke - Growth\ rate}$
- → **EQUITY VALUE (E_0)** = $\sum_{t=0}^{T} \frac{FCFE(t)}{(1+ke)^t} + \left(\frac{TV}{(1+ke)^T}\right)$

- **BUDGETED REVENUES** = Volume of sales * price per unit
- **Cost of SALES** = Cost of goods available for sale
- **if we don't have the ending finished good inventory then:** cost of goods available for sale = cost of good sold
- **Cost of GOODS MANUFACTURED** = cost available for sale – cost of good purchased – beginning finished good inventory
- **DIRECT MATERIAL USAGE budget** = cost of goods manufactured – direct manufacturing labor – total overhead
- **DIRECT MATERIAL BUDGET** = Budgeted average cost of materials per unit * budgeted production
- **PRODUCTION** = Budgeted sales + Target ending level of finished goods – Beginning finished goods inventories
- **MANUFACTURING OVH BUDGET** = operators + supervisor + depreciation + other OVH
- **BUDGETED FULL PRODUCTION COST** = direct material + manufacturing OVH
- **BUDGETED UNITARY PRODUCTION COST** = full production cost / budgeted production
- **BUDGETED COGS** = production sold * unitary production cost + cost of inventories sold
- **BUDGETED PERIOD COSTS** = Period costs(expenses) of 2021 * (1 + alpha)
- **EBIT** = Revenues – COGS – Period Costs
  EBIT = ROS * Revenues
- **ROS * (Revenues)** = Revenues – COGS – Period Costs
- **Revenues (1 – ROS)** = COGS + Period Costs
- **INTEREST QUOTA YEAR 1** = Debt year 1 x interest
- **CAPITAL QUOTA YEAR 1** = Leasing rent - Interest quota year 1

IMPAIRMENT TEST:

- RECOVERABLE AMOUNT = max (Fair value, value in use)
- IMPAIRMENT LOSS = book value(f) – min(REC. am, bv(f))