CS Executive FM All in one Formula Chart by CA.CMA Suraj G. Tatiya

Chapter 1: Nature, Significance and Scope of Financial Management

Economic Value-Added (EVA)

EVA = (Operating Profit) – (A Capital Charge)

EVA = NOPAT – (Cost of Capital x Capital)

Profitability ratios

(1) $\frac{\text{Earning available to common shareholders}}{\text{Total Equity}}$

(2) $\frac{\text{Net income after tax}}{\text{Total Equity}}$

[The ratio at (2) is used where the company has no preference shareholders].

Net Profit Margin

$$\text{Net Profit Margin (NPM)} = \frac{\text{Net Profit after Taxes}}{\text{Sales}}$$

RETURN ON INVESTMENT (ROI)

$$\frac{\text{EBIT}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Assets}} = \frac{\text{EBIT}}{\text{Assets}}$$

Chapter 3 : Capital Structure and leverage

Net Income Approach

$$K = K_d \times \frac{D}{(D+E)} + K_e \times \frac{E}{(D+E)}$$

Modigliani - Miller Theory

$$V_j = V_u = \frac{EBIT}{K_{ol}} = \frac{EBIT}{K_{ou}}$$

Operating Leverage

$$\text{Operating Leverage} = \frac{\text{Contribution}}{\text{Operating Profit (EBIT)}}$$

Degree of Operating Leverage

$$DOL = \frac{\text{Percentage change in EBIT}}{\text{Percentage change in sale}}$$

Financial Leverage

$$\text{Financial Leverage} = \frac{\text{Operating Profit (EBIT)}}{\text{Profit Before Tax}}$$

Degree of Financial Leverage

$$DFL = \frac{\text{Percentage change in taxable Income}}{\text{Percentage change in operating income}}$$

$$DFL = \frac{\text{Percentage change in EPS}}{\text{Percentage change in EBIT}}$$

Combined Leverage

$$DCL = DOL \times DFL = \frac{\text{Contribution}}{EBIT} \times \frac{EBIT}{PBT} = \frac{\text{Contribution}}{PBT}$$

Degree of Financial Leverage

$$\text{Degree of combined leverage} = \frac{\text{Percentage change in EPS}}{\text{Percentage change in sales}}$$

Working Capital Leverage

Chapter 2 : Investment Decisions : CAPITAL BUDGETING

(a) Average Rate of Return in Original Investment:

$$= \left(\frac{\text{Net earnings after Depreciation and Taxes}}{\text{No. of years project will last}}\right) \div \text{Original Investment}$$

(b) Average Rate of Return on Average Investment:

$$= \left(\frac{\text{Net earnings after Depreciation and Taxes}}{\text{No. of years project will last}}\right) \div \text{Average Investment}$$

Decision Rule for Average of Rate of Return Method:

Normally, business firm determine rate of return. So accept the proposal if

ARR > Minimum rate of return (cut off rate)

and Reject the project if

ARR < Minimum rate of return (cut off rate)

Decision Rule of using NPV Method:

If NPV > Zero : Accept the project

NPV < Zero : Reject the project

NPV = Zero : Firm is indifferent to accept or reject the project.

Decision Rule:

If Internal Rate of Return i.e.

r > k (cut off rate) Accept the investment proposal

r < k Reject the investment proposal

r = k Indifferent

$$\text{Profitability index} = \frac{\text{PV of Future cash flows}}{\text{Initial cash investment}}$$

Standard Variation and co-efficient of Varition

$$\text{Standard Deviation} \sqrt{\frac{\Sigma f(x-\bar{x})^2}{\Sigma f}}$$

$$\text{Co-efficient of Variation} = \frac{\text{Standard Deviation}}{\text{Mean}} \times 100$$

Certainty Equivalent Coefficient Approach

$$\alpha_t = \frac{NCF_t^*}{NCF_t} = \frac{\text{Certain net cash flow}}{\text{Risky net cash flow}}$$

Expected Net Present Value:

= Summation of (CFAT*probability)

CFAT : Cash flow after Tax

Standard Deviation

$$\sigma = \sqrt{\sum_{i=1}^{n} \left(CF_i \times \overline{CF}\right)^2 \times P_i}$$

Coefficient of Variation:

$$CV = \frac{\text{Standard deviation or } \sigma}{\text{Expected Value CF}}$$

Chapter 9 : Portfolio Management

Coefficient of Correlation

$$Cor_{(xy)} = r_{xy} = \frac{cov_{(xy)}}{\sigma x \sigma y}$$

Chapter 6: Dividend Policy

Walter's Model

P : market price per share of common stock

D : dividend per share

E : earnings per share

r : return on investment

k : market capitalization rate.

$$P = \frac{D + \frac{r}{k}(E-D)}{k}$$

Gordon's Model

$$P = \frac{E(1-b)}{k_e - br}$$

Where, P = Market price of a share

E = Earning per share

b = Retention ratio or percentage of earnings retained or (1 – Payout ratio)

(1 - b) = dividend payout ratio, i.e., percentage of earnings distributed as dividend

k_e = Capitalisation rate/cost of capital

br = growth rate in r, i.e., rate of return on investment of an all equity firm.

DIVIDEND IRRELEVANCE: MODIGLIANI - MILLER MODEL

$$P_0 = \frac{1}{1+r}(D_1 + P_1)$$

Where

P_0 = market price per share at 0 time

r = Capitalisation rate for firm in that risk class (assumed constant throughout)

D_1 = Dividend per share at time 1

P_1 = Expected market price per share at time 1.

Chapter 7: Working Capital

The operating cycle process can be expressed as follows:

Operating Cycle = R + W + F + D – C

Where,

R = Raw material storage period

W = Work-in-progress holding period

F = Finished goods storage period

D = Receivables (Debtors) collection period.

C = Credit period allowed by suppliers (Creditors).

S.No.	Name of Working Capital Component	Formula
1.	**Raw materials**	
	Period of raw material stock	Average value of Raw material stock / Consumption of raw material per day
	Less: Period of credit granted by supplier	Average level of creditors / Purchase of raw materials per day
2.	Period of Production	Average value of work in progress / Average cost of production per day
3.	Period of turnover of finished goods stock	Average Stock of finished goods / Average cost of goods sold per day
4.	Period of credit taken by customers	Average receivable / Average value of credit sales per day
	Total operating cycle period	Sum of Sl. Nos. 1, 2, 3, 4

$$\text{Working Capital Leverage} = \frac{\text{Percentage Change in ROI}}{\text{Percentage Change in Working Capital}}$$

$$Working\ Capital\ Leverage = \frac{CA}{TA + DCA}$$

where,

CA = Current Assets

TA = Total Assets

DCA = Changes in the level of Current Assets

Chapter 4 : Sources of Raising Long Term Finance and Cost of Capital

Cost of Debt (Kd)

Kd = I * (1 - T) /NP

NP : Net proceeds

COST OF PREFERENCE SHARE CAPITAL

Cost of Irredeemable preference shares:

$$\text{Kp (cost of pref. share)} = \frac{\text{Annual dividend of preference shares}}{\text{Market price of the preference stock}}$$

Cost of Redeemable preference shares:

$$\text{Cost of Redeemable preference shares} = Kp = \frac{D + (RV - SV) / N}{(RV + SV) / 2}$$

Where Kp= Cost of preference Shares

RV- Redemption value

SV= Sale value

N= No of years to Maturity

D= Annual Dividend

COST OF EQUITY CAPITAL

CAPM model

$$Ke = R_f + (R_m - R_f)\ ß$$

Bond Yield Plus Risk Premium Approach

Cost of equity = Yield on long-term bonds + Risk Premium.

Dividend Growth Model Approach

$Ke = (D_1/P_0) + g$

Earnings-Price Ratio approach

$$Ke = \frac{E_1}{P_0}$$

Where:

E_1 = Expected earnings per share for the next year

P_0 = Current market price per share

E_1 = (Current EPS) * (1 + growth rate of EPS)

where:

r_{xy} = coefficient of correlation of x and y

COV_{xy} = covariance between x and y

σ_x = standard deviation of x

σ_y = standard deviation of y

Calculation of Portfolio Risk

$$\sigma_p = \sqrt{W_x^2.\sigma_x^2 + W_y^2.\sigma_y^2 + 2W_xW_y(r_{xy}\sigma_x\sigma_y)} \quad \text{Eq.9.1}$$

Where:

σ_p = portfolio standard deviation

w_x = percentage weightage of total portfolio value in stock X

w_y = percentage weightage of total portfolio value in stock Y

σ_x = standard deviation of stock X

σ_y = standard deviation of stock Y

r_{xy} = correlation coefficient of X and Y

Capital Asset Pricing Model

$$\text{Beta} = \frac{\text{Non-diversifiable risk of asset or portfolio}}{\text{Risk of market portfolio}}$$

The equation of the capital market line

$$R_e = R_F + \frac{R_M - R_F}{\sigma_M}\ \sigma_e$$

To forecast the working capital requirement for the next period, the following may also be used:

$$C + \frac{O.C.}{\text{Number of working days in the period}} \times C.O.G.S$$

Where, C = Cash balance required

O.C. = Operating cycle

C.O.G.S. = Estimated cost of goods sold.

William J. Baumal Model for Optimal Cash Balance Management

$$\text{Formula Economic lot size} = \sqrt{\frac{2 \times Tb}{I}}$$

Where T= Projected cash requirement

b= Conversion cost per lot

I= Interest earned on marketable securities pe

Given the above assumptions, the optimum or economic order quantity is represented as:

$$EOQ = \sqrt{\frac{2AO}{C}}$$

Where A = Total annual requirement for the item

O = Ordering cost per order of that item

C = Carrying cost per unit per annum.

1. $\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$
2. $\text{Acid Test Ratio} = \frac{\text{Current Assets} - \text{Inventories}}{\text{Current Liabilities}}$
3. $\text{Inventory Turnover} = \frac{\text{Cost of goods sold}}{\text{Average Inventory}}$
4. $\text{Current Assets Turnover} = \frac{\text{Annual Sales}}{\text{Current Assets}}$
5. $\text{Receivable Turnover} = \frac{\text{Sales}}{\text{Debtors}}$
6. $\text{Debt-equity ratio} = \frac{\text{Total long term debts}}{\text{Shareholder funds}}$

Important Instructions :

1. The above chart is useful only if you have studied the subject logically. Just learning the formulae wont be of much help.
2. During the exam, along with this chart just solve some practical illustrations based on each formula/model and you should be well prepared.
3. You can also refer to my marathon uploaded on Youtube for Comprehensive revision.

Lots of love and best wishes. God Bless.

- CA.CMA. SGT, 7887885989

Yes Academy for CS, 8888 235 235