

**ADVANCED FINANCIAL
MANAGEMENT**

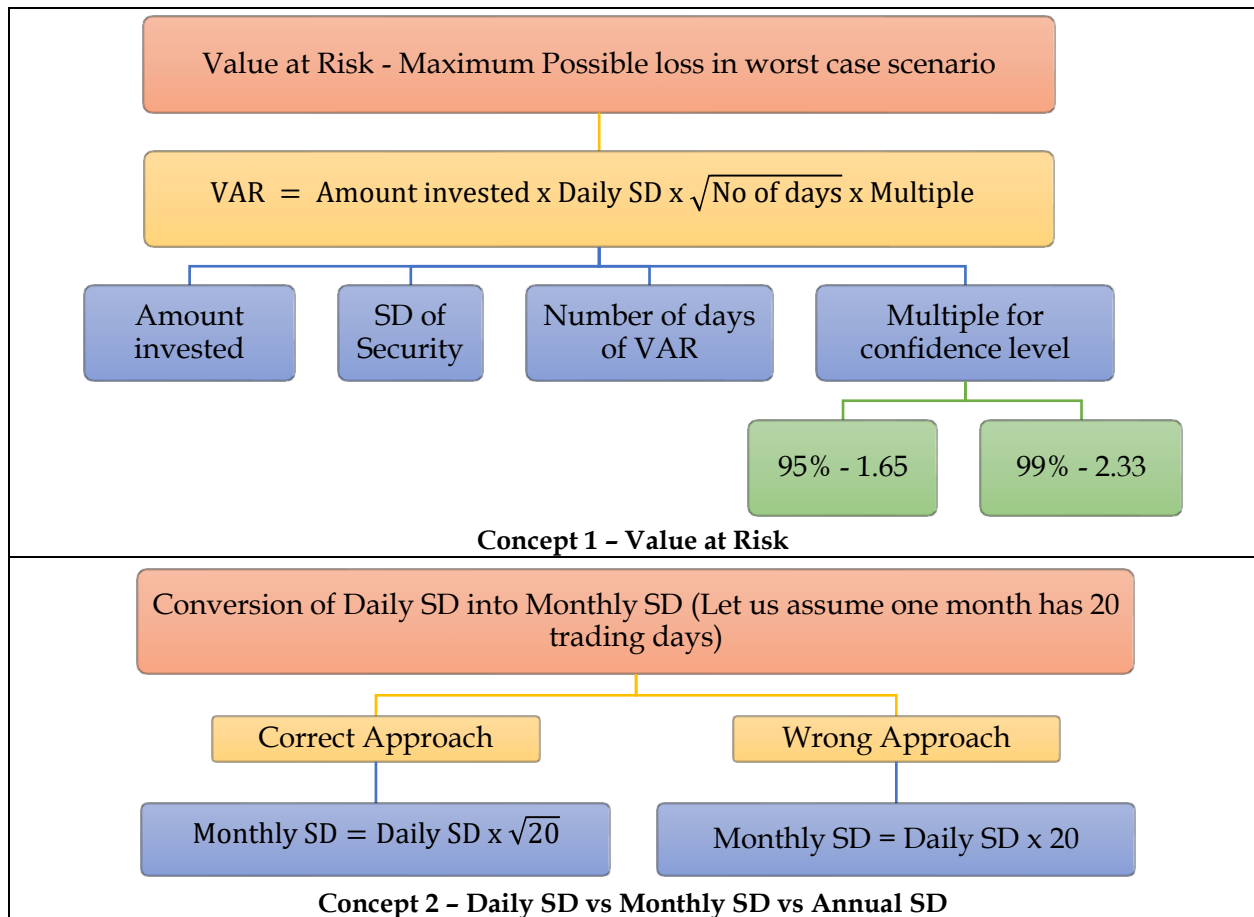
**SUMMARY CHARTS (TO BE USED
ALONG WITH CONCEPT BOOK
SECOND/THIRD EDITION)**

BY CA. DINESH JAIN

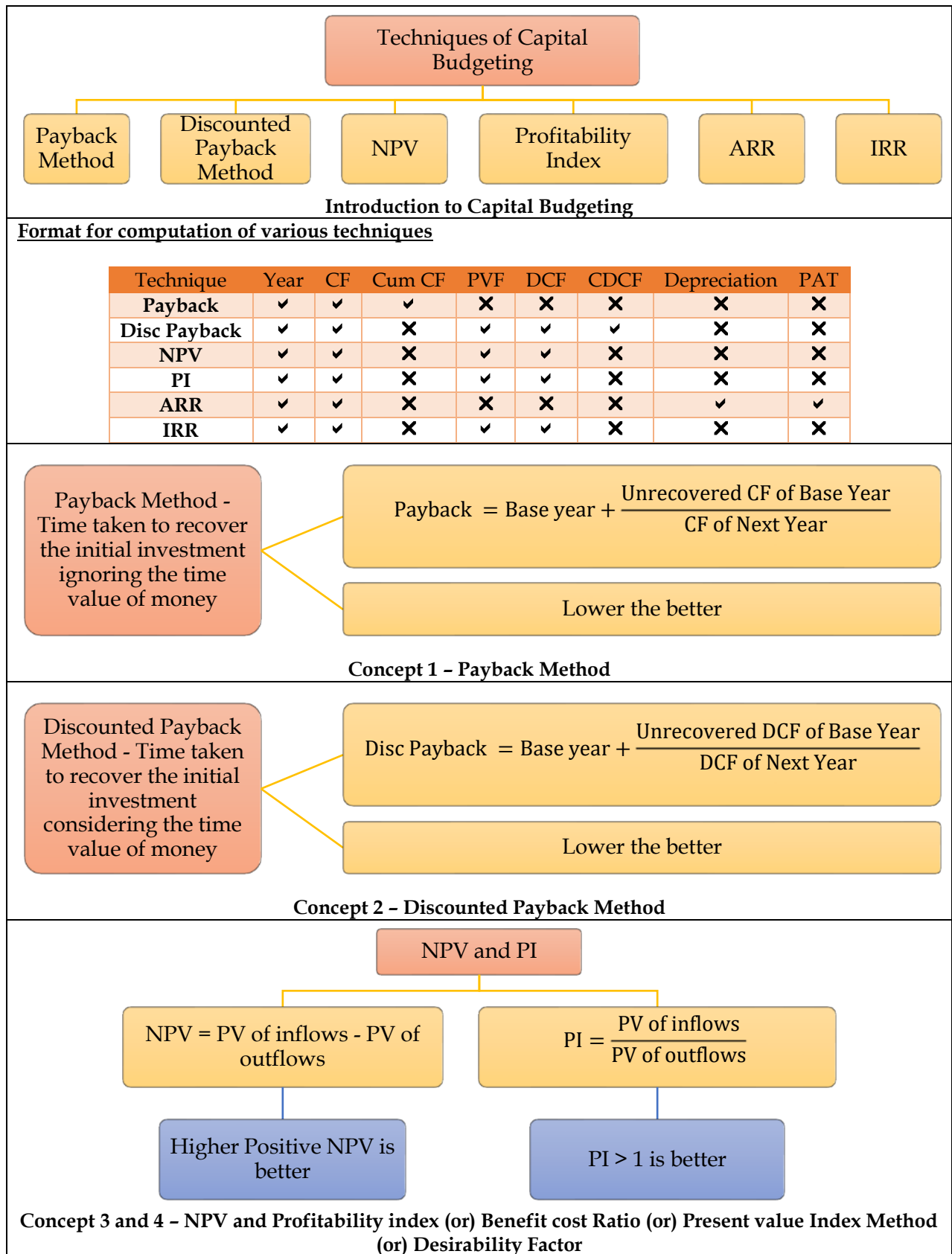
**DEDICATED TO MY LOVABLE FATHER
[RAMESH JAIN]**

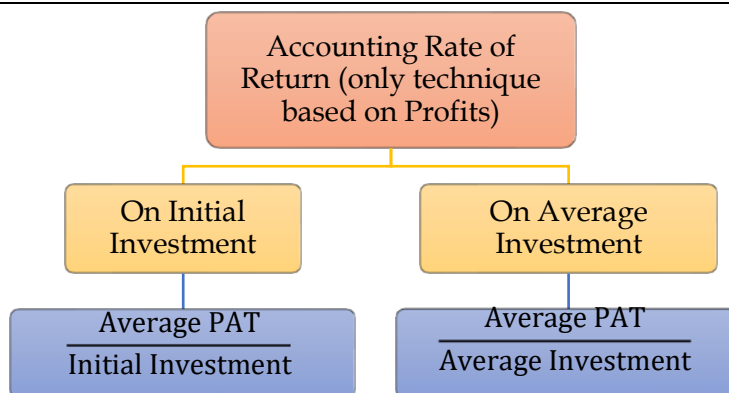
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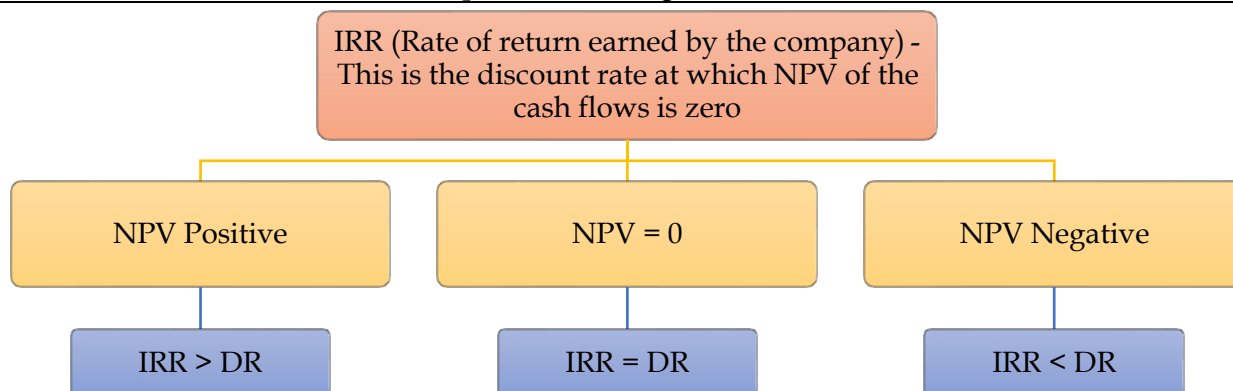
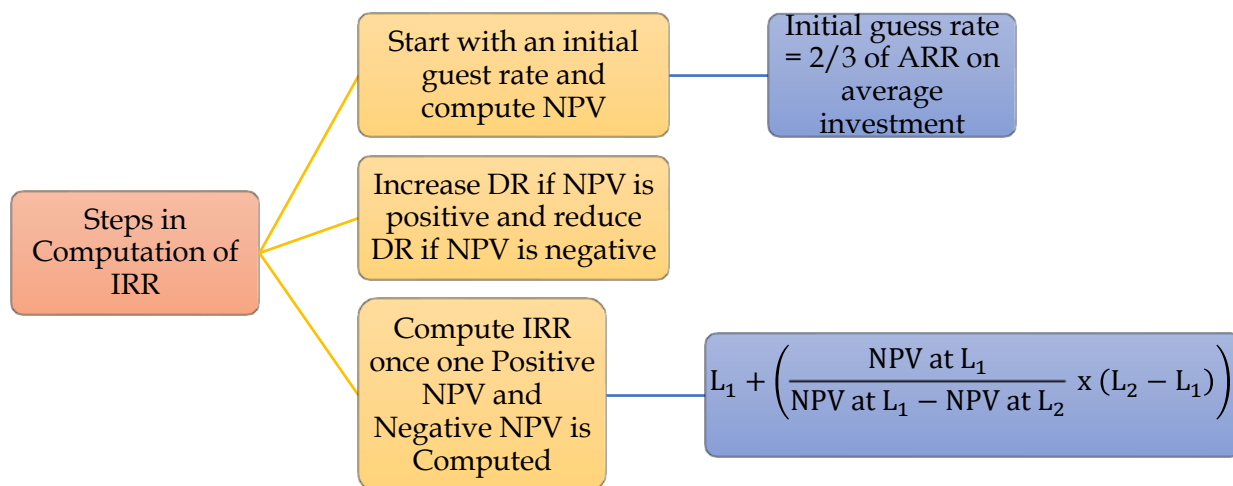
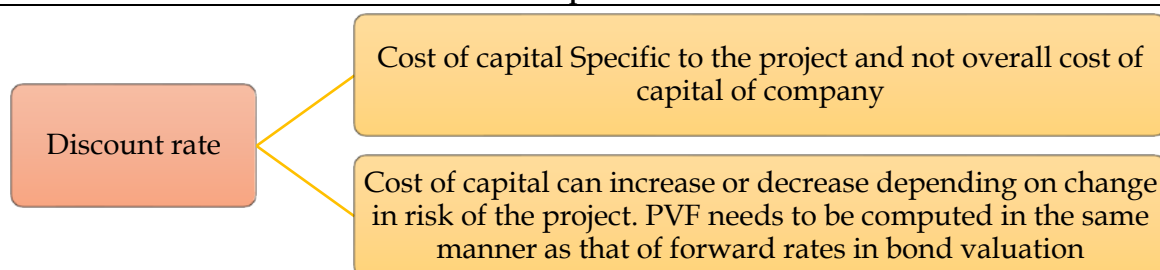
Chapter 2 – Risk Management

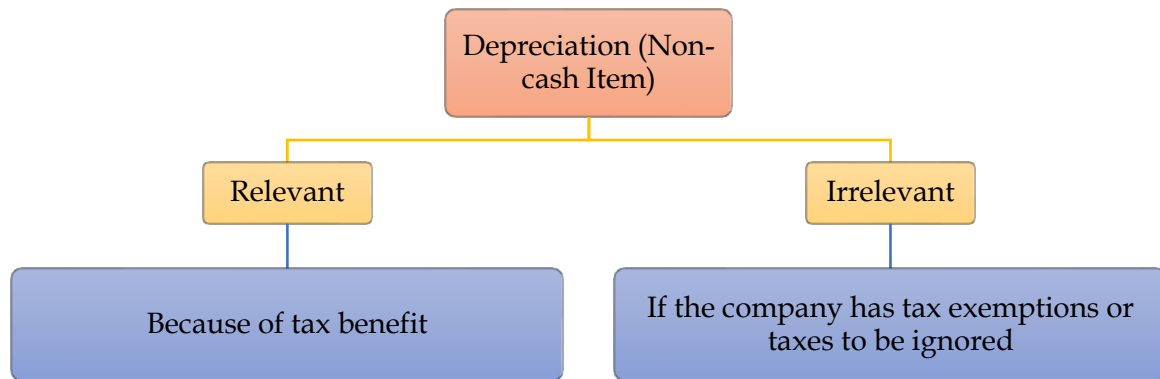
Chapter 3 – Advanced Capital Budgeting Decisions



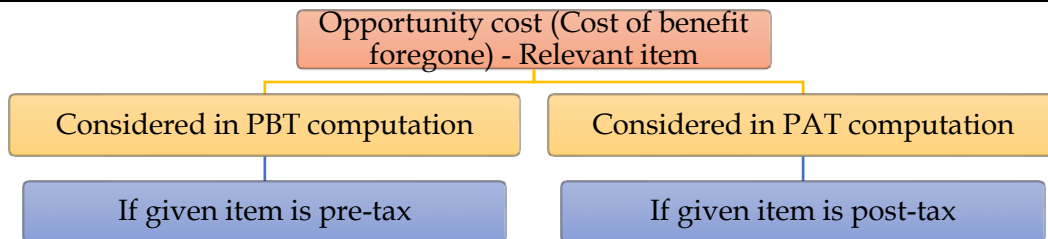
**Note:**

$$\text{Average investment} = \frac{\text{Opening investment} + \text{Closing investment}}{2}; \text{Closing investment} = \text{Salvage value}$$

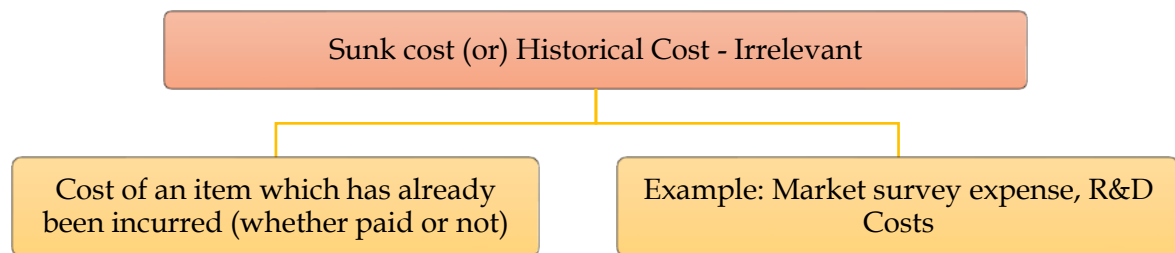
Concept 5 - Accounting Rate of Return**Concept 6 - IRR****Concept 6 - IRR****Concept 7 - What discount rate to be used for Project Evaluation?**



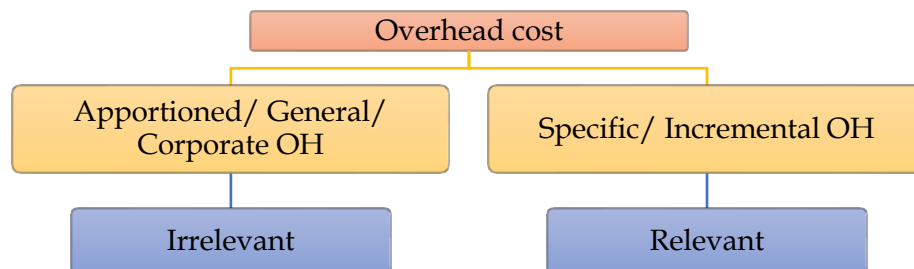
Concept 8 – Rules for computation of Cash flows



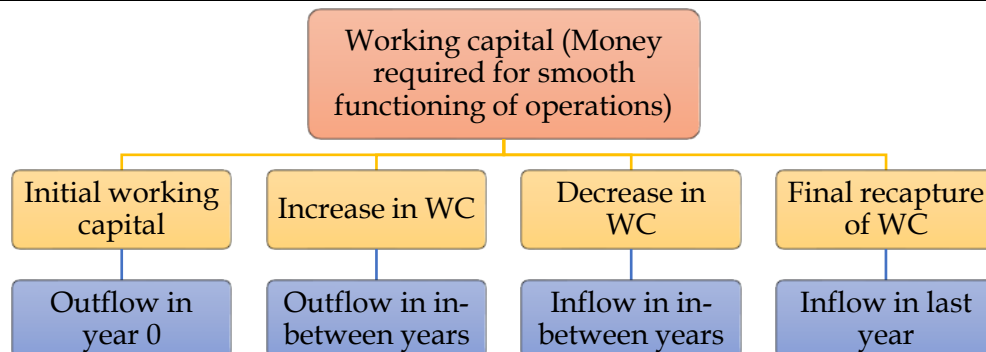
Concept 8 – Rules for computation of Cash flows



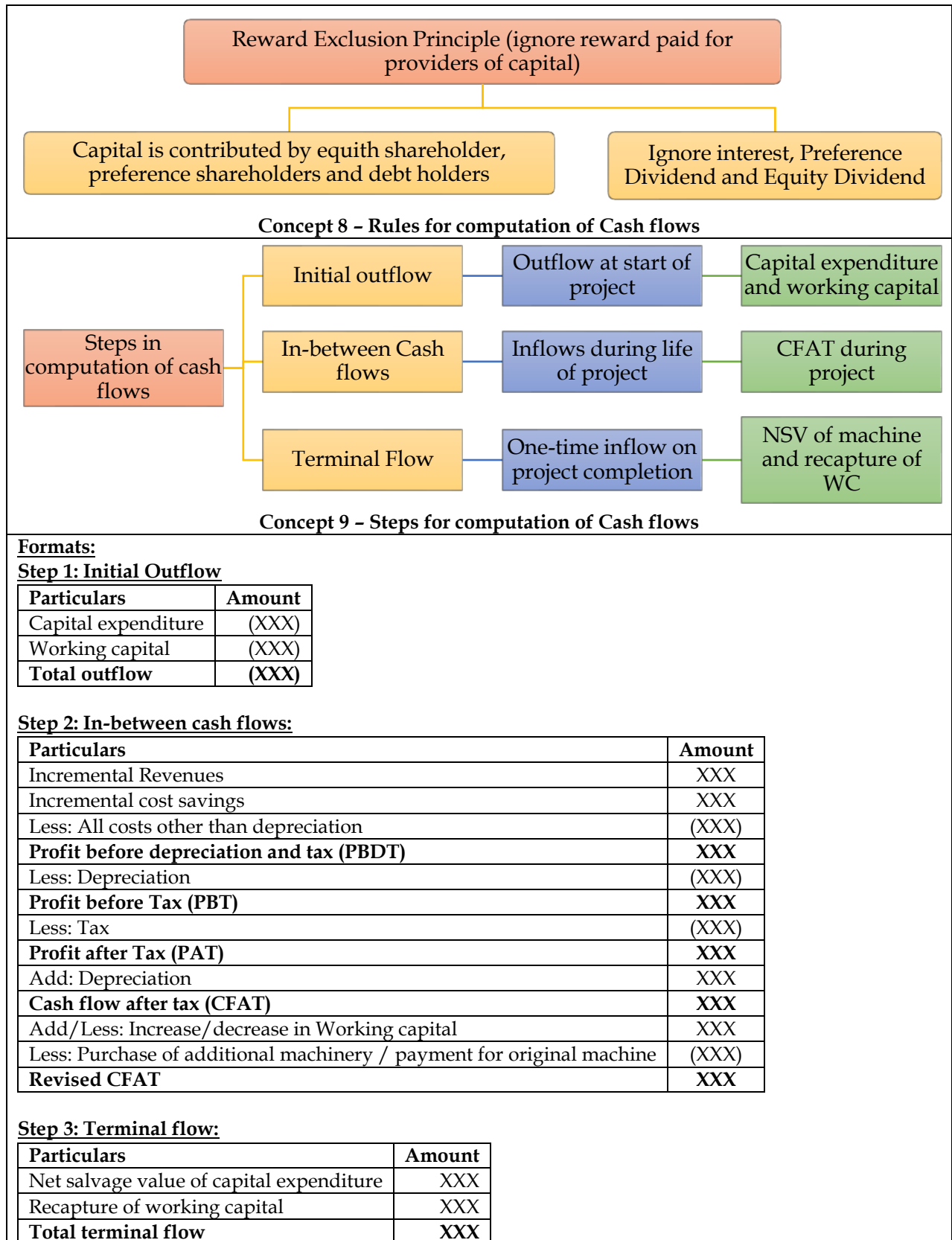
Concept 8 – Rules for computation of Cash flows

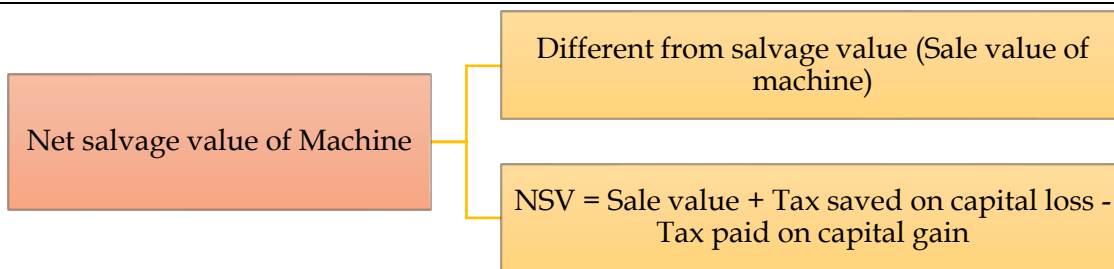


Concept 8 – Rules for computation of Cash flows

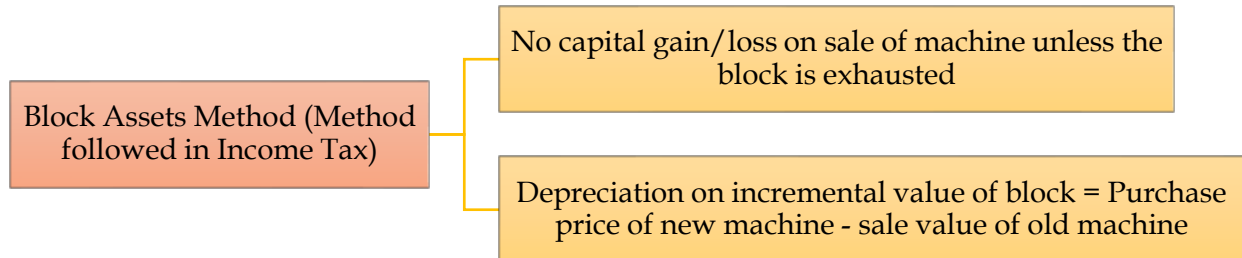


Concept 8 – Rules for computation of Cash flows

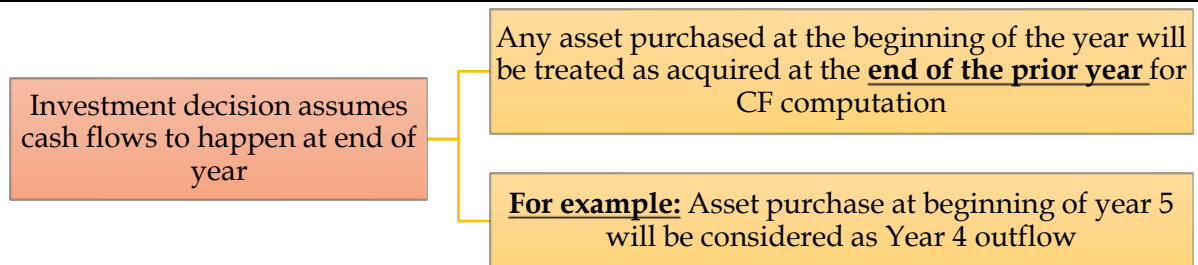




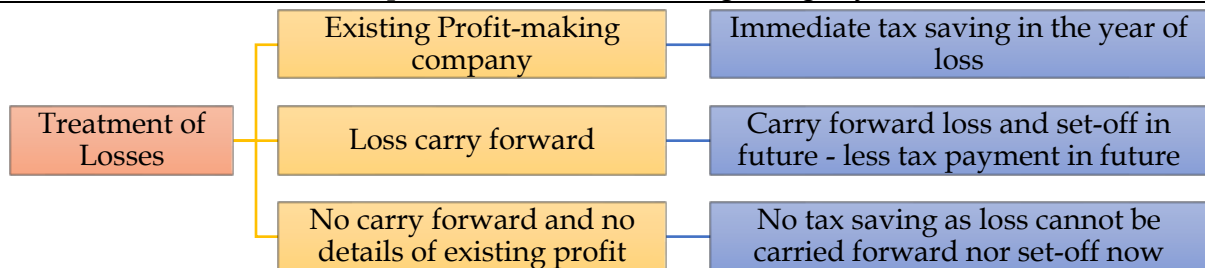
Concept 9 - Steps for computation of Cash flows



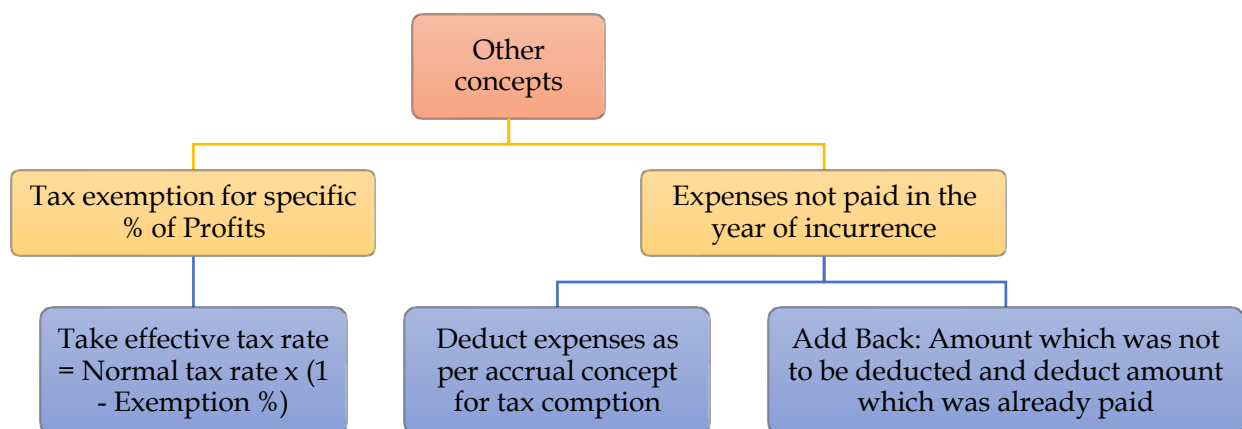
Concept 9 - Steps for computation of Cash flows



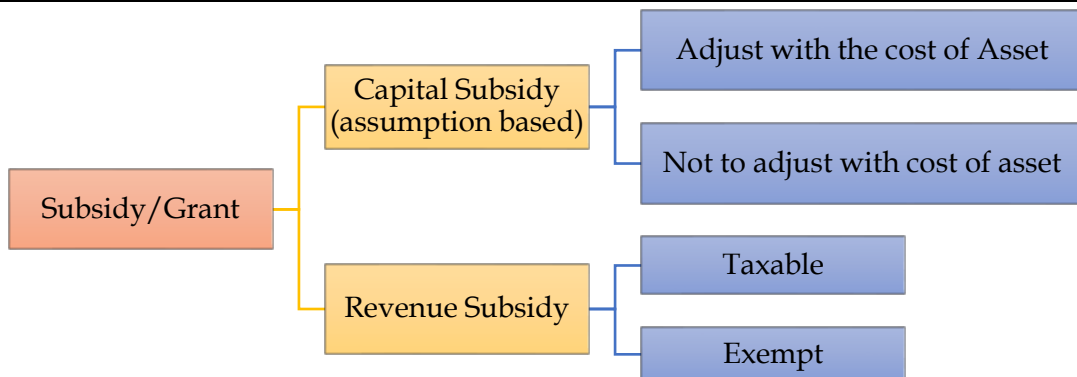
Concept 10 - Asset Purchase at beginning of year



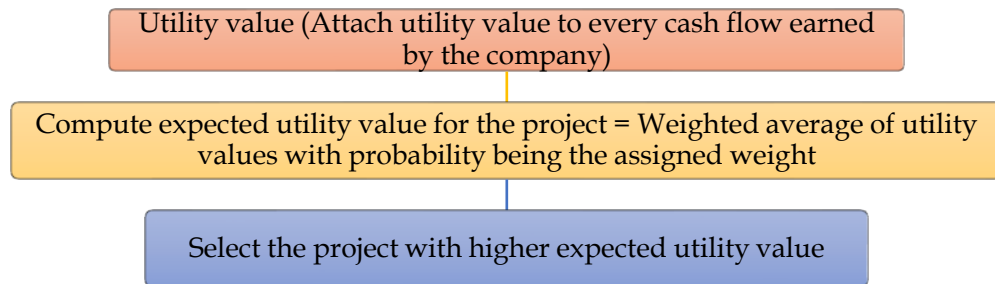
Concept 11 - Impact of Losses



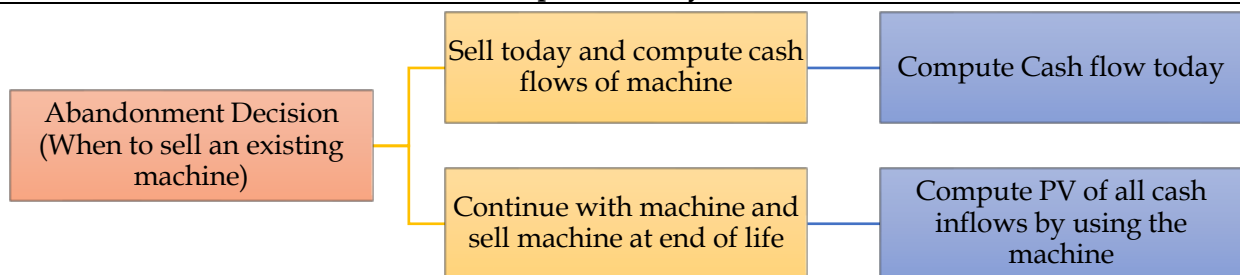
Concept 12 and 13 - Tax Exemption for Specific % of Profits and Expenses not paid in the year of incurrence



Concept 14 - Treatment of Subsidy/Government Grant



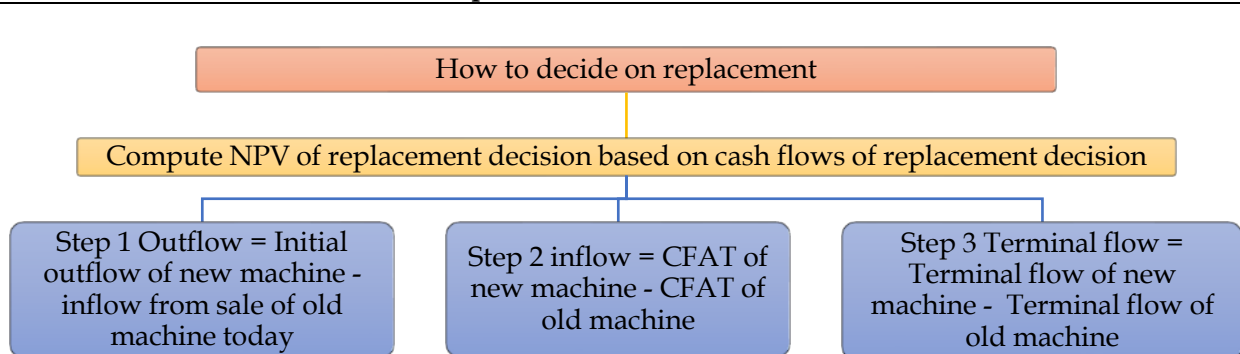
Concept 15 - Utility Value



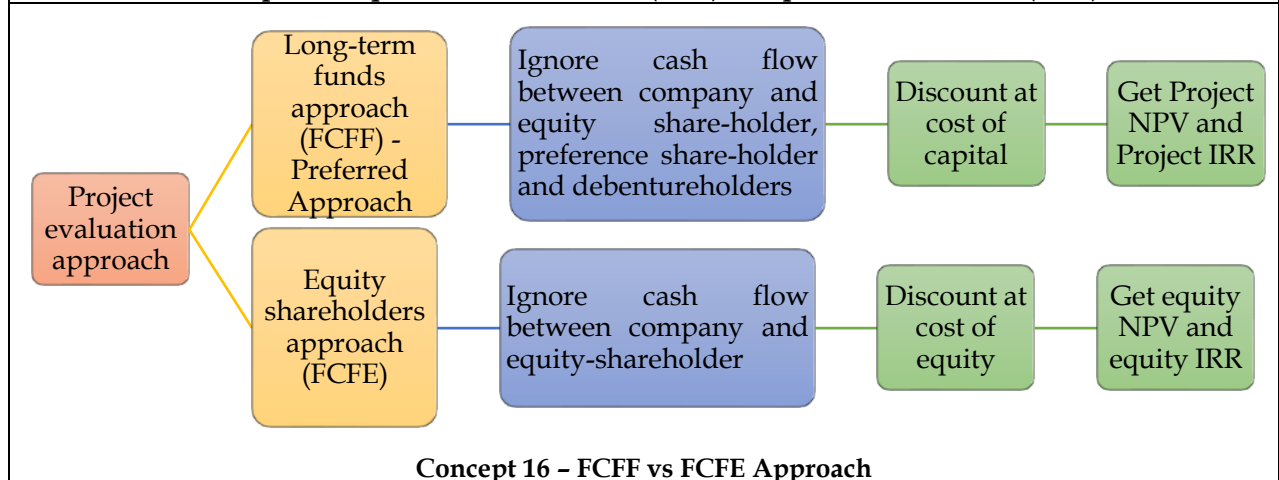
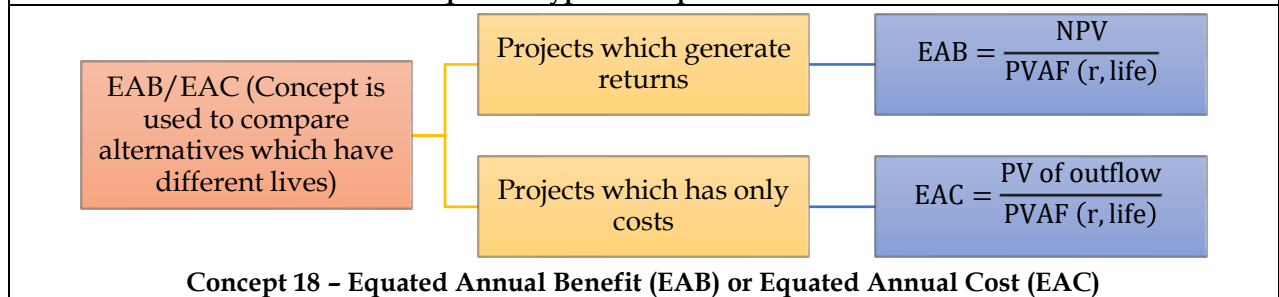
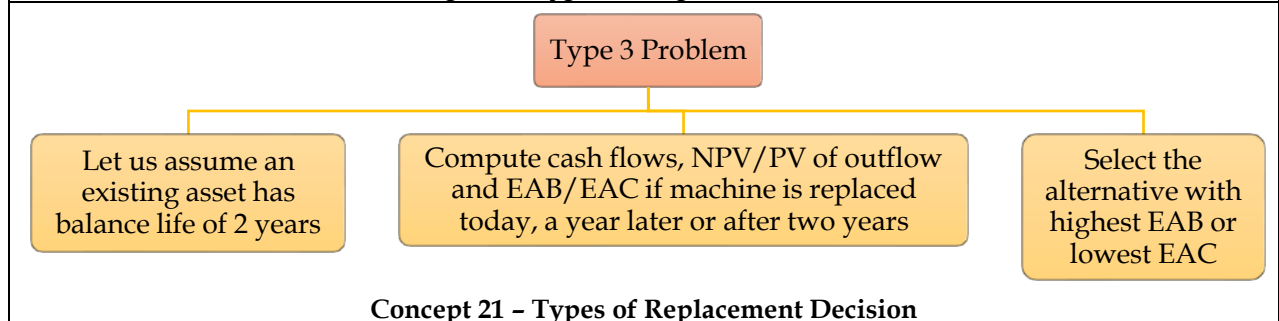
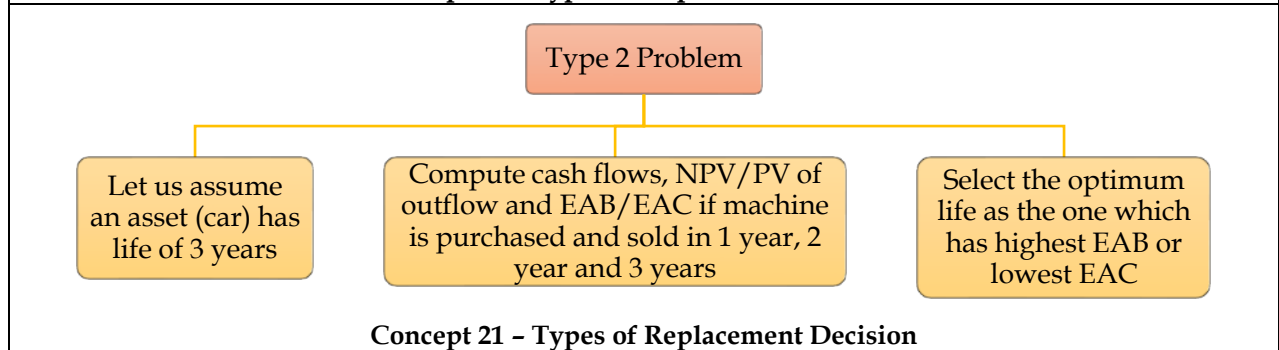
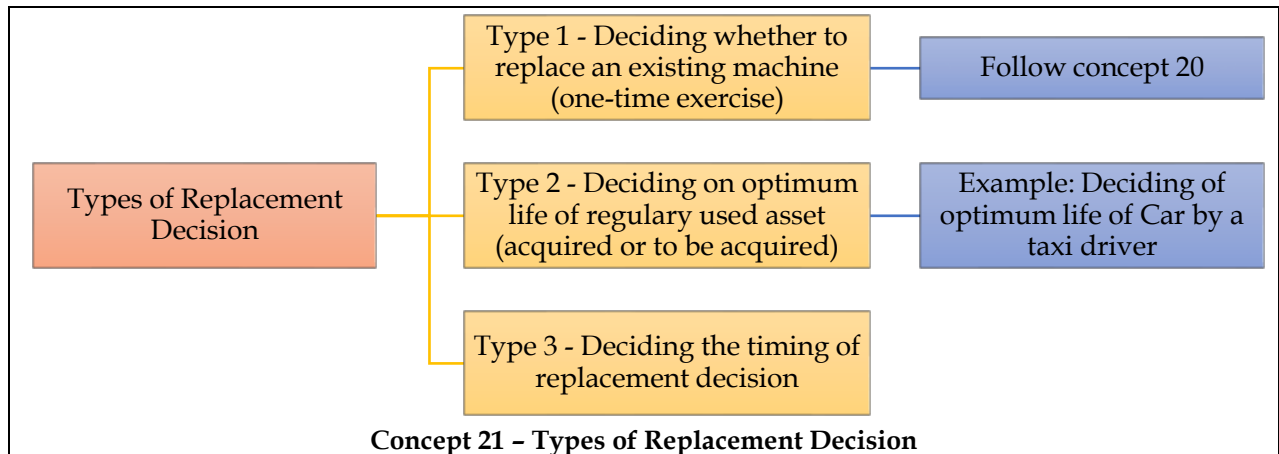
Note:

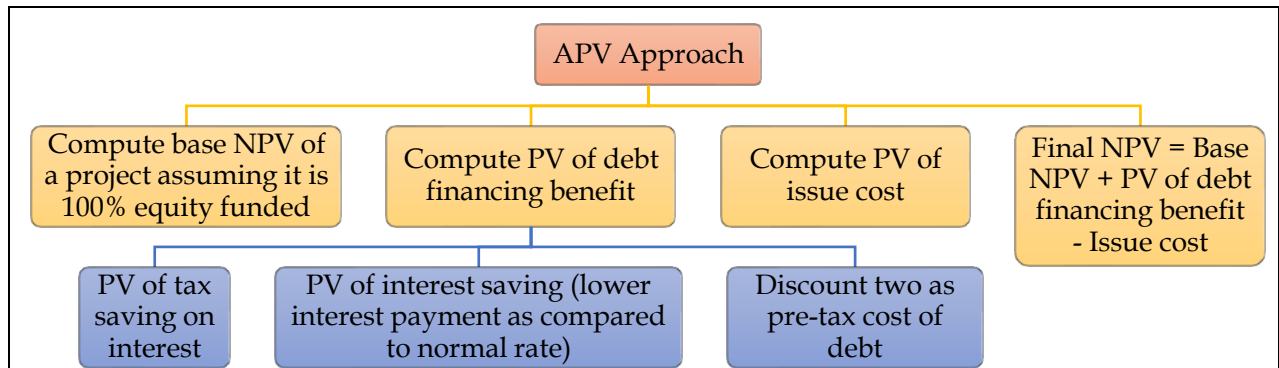
- $NPV = PV \text{ of continuation option} - PV \text{ of selling today}$
- If NPV is positive, continue using the machine and If NPV is negative, sell the machine today.

Concept 19 - Abandonment Decision

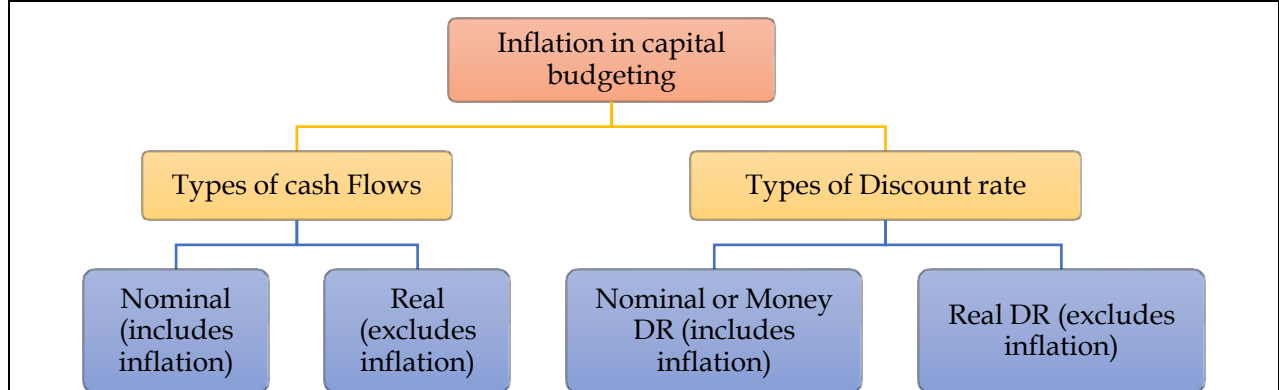


Concept 20 - Replacement Decision

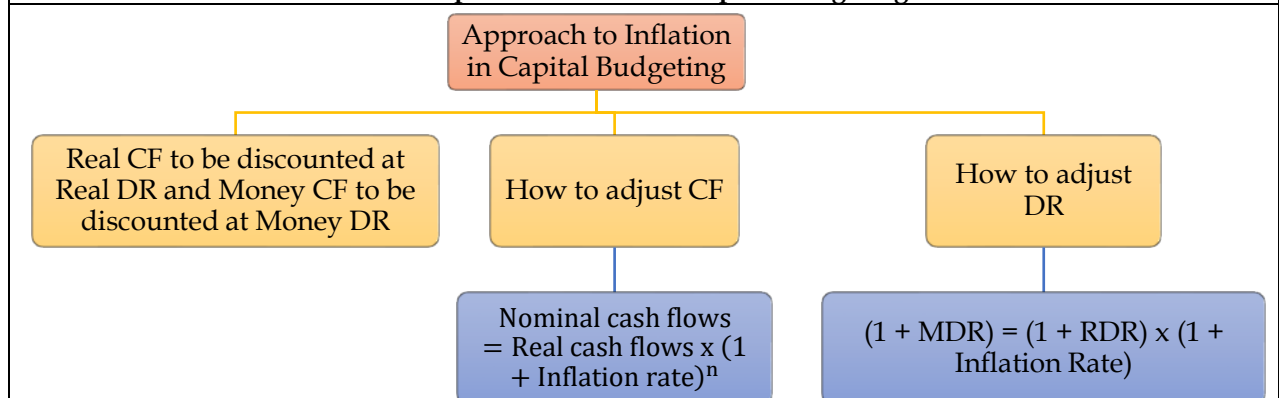




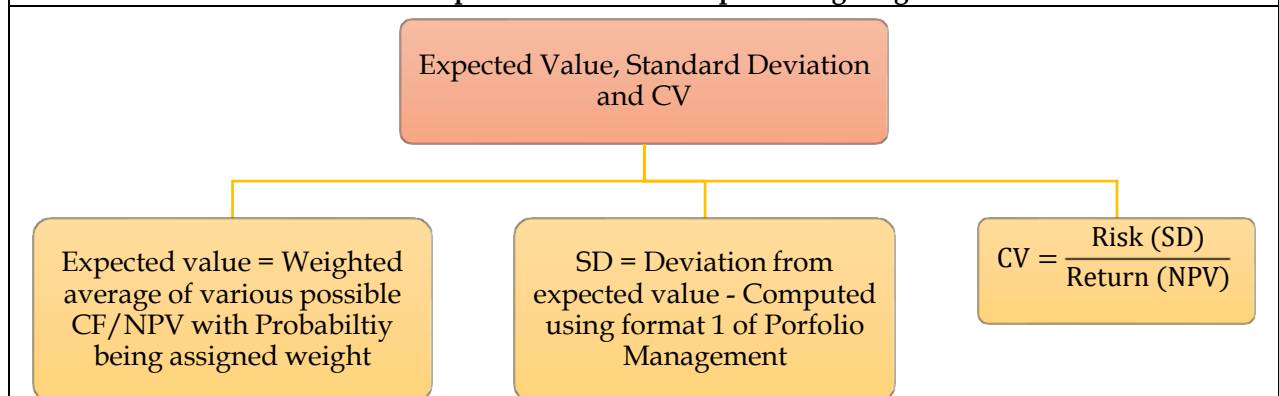
Concept 17 - Adjusted Present Value Approach



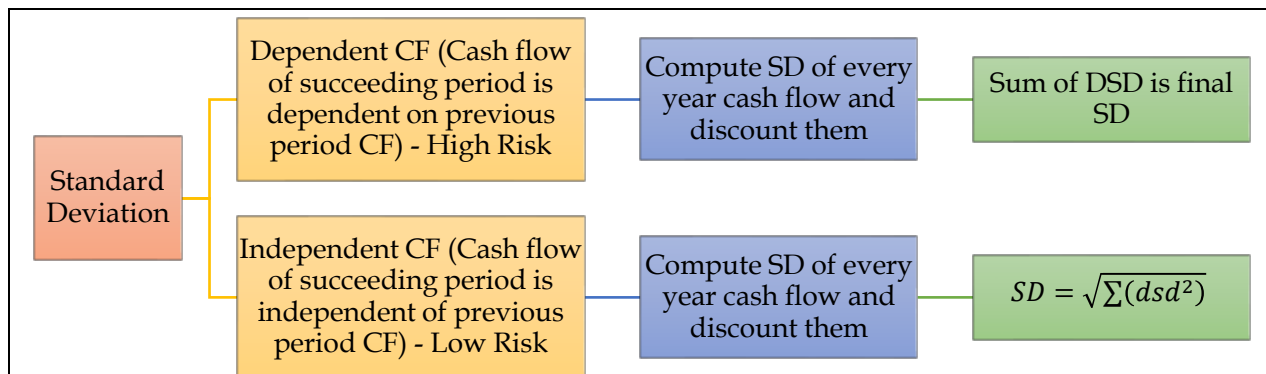
Concept 22 - Inflation in Capital Budgeting



Concept 22 - Inflation in Capital Budgeting



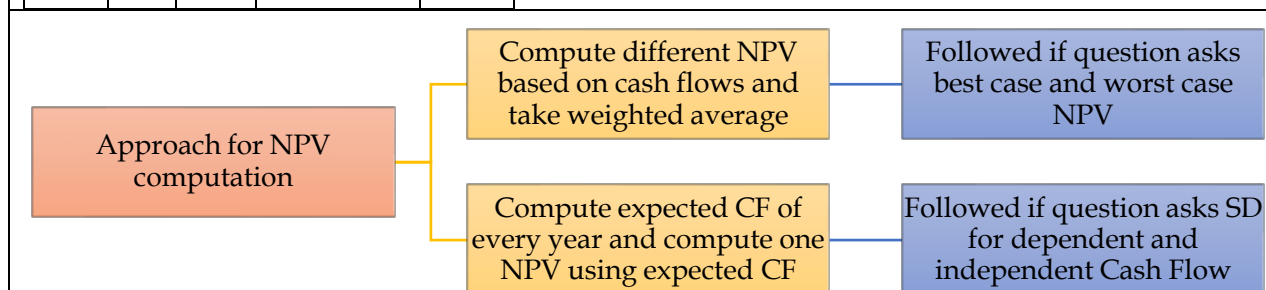
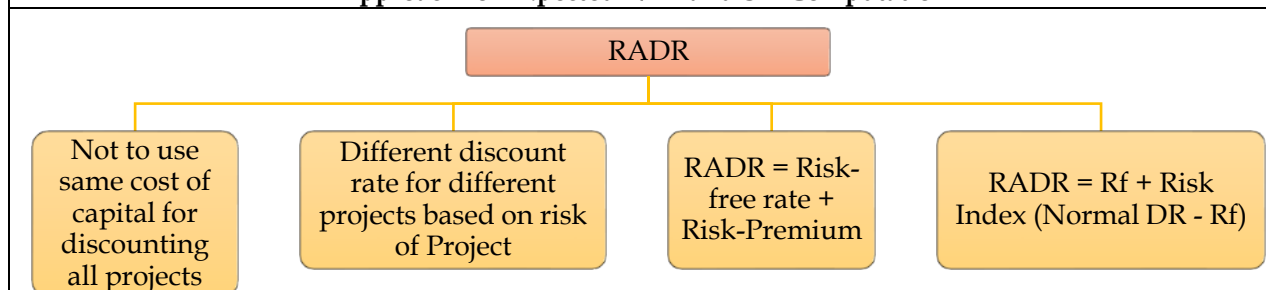
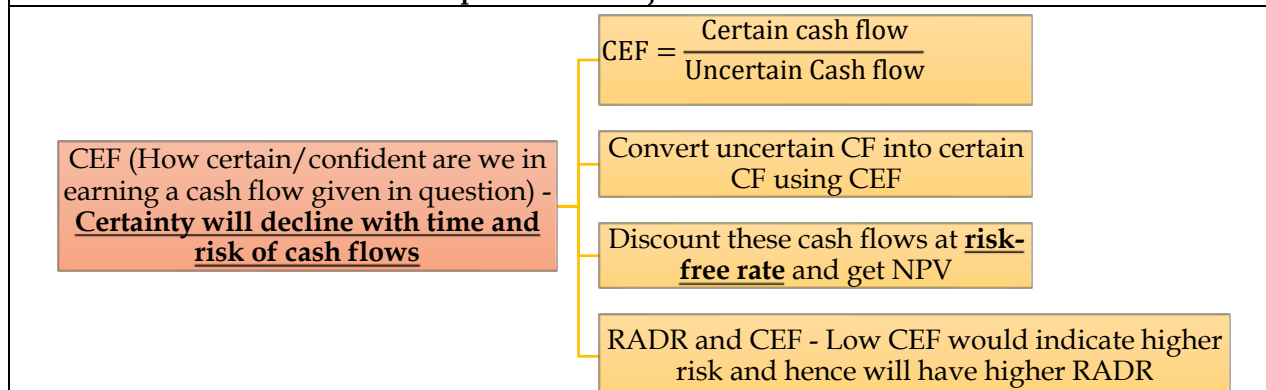
Concept 23 - Expected Value, Standard Deviation and CV

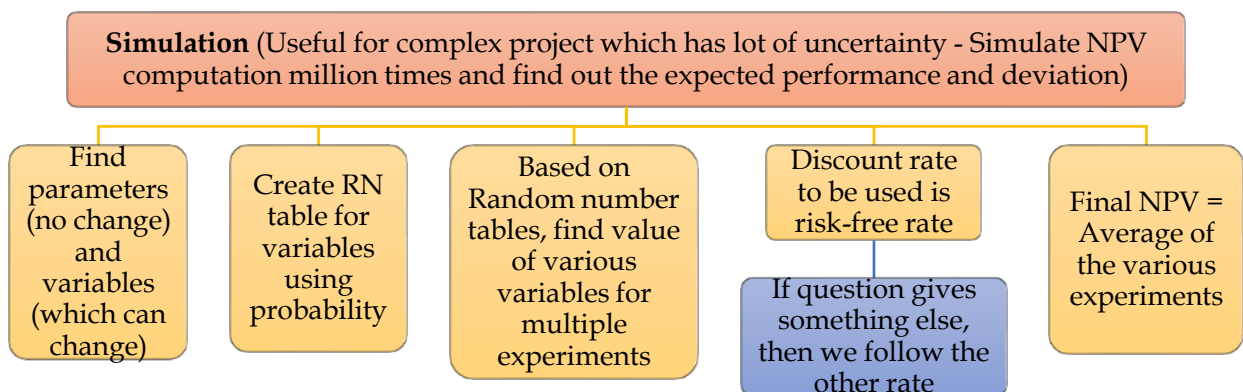
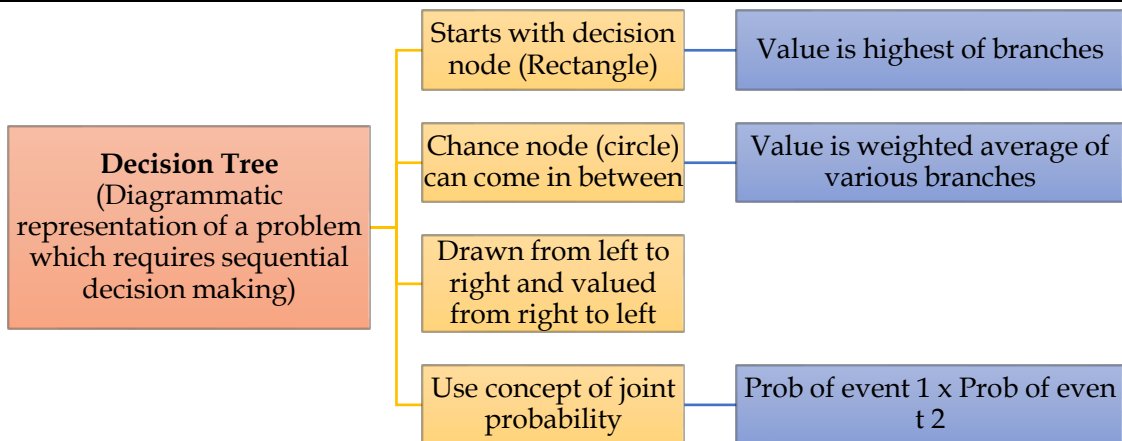
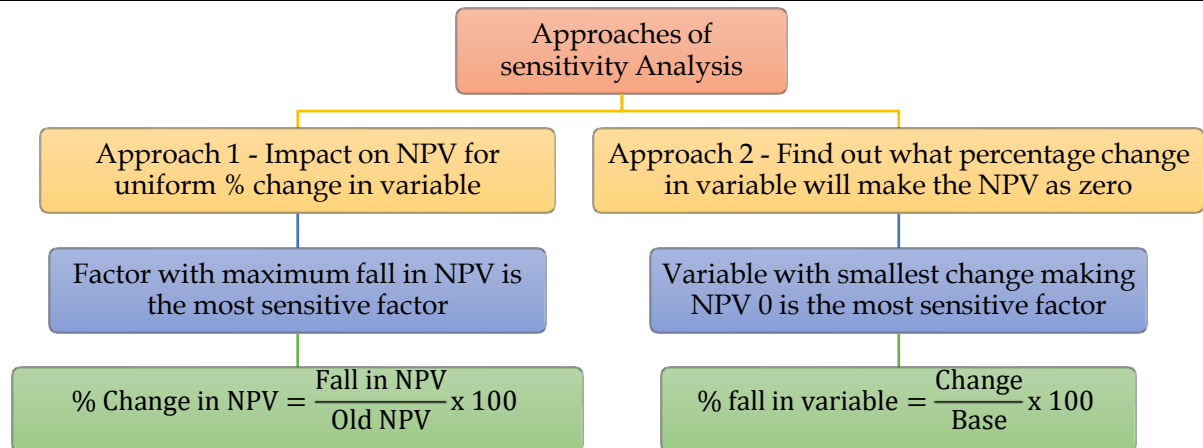
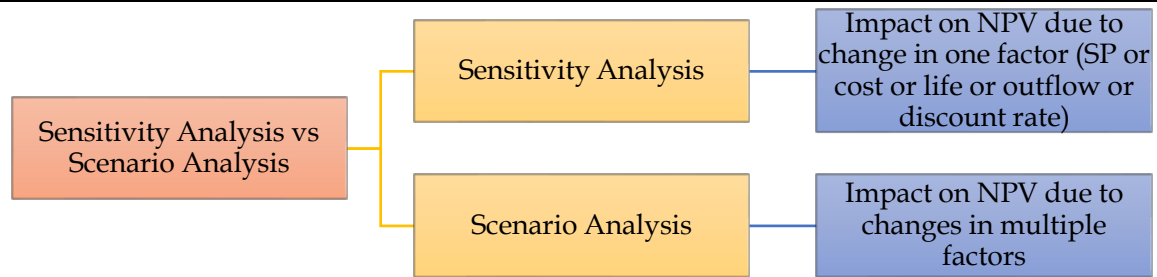
**Note: Probability of NPV**

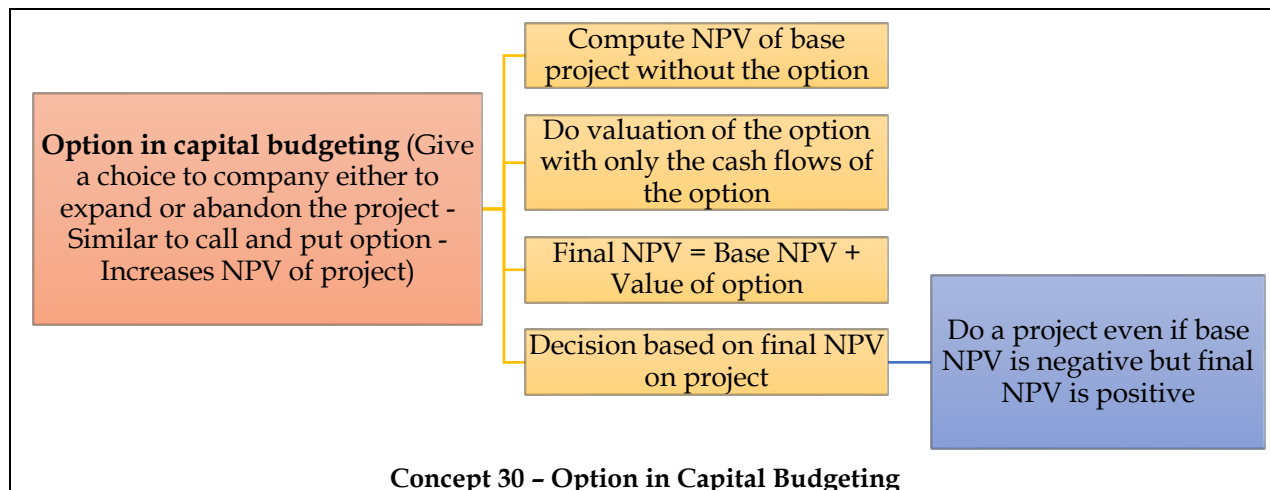
- Probability of Dependent cash flow NPV = Probability of the cash flow in year 1
- Probability of independent cash flow NPV = (Probability of the cash flow in year 1)ⁿ

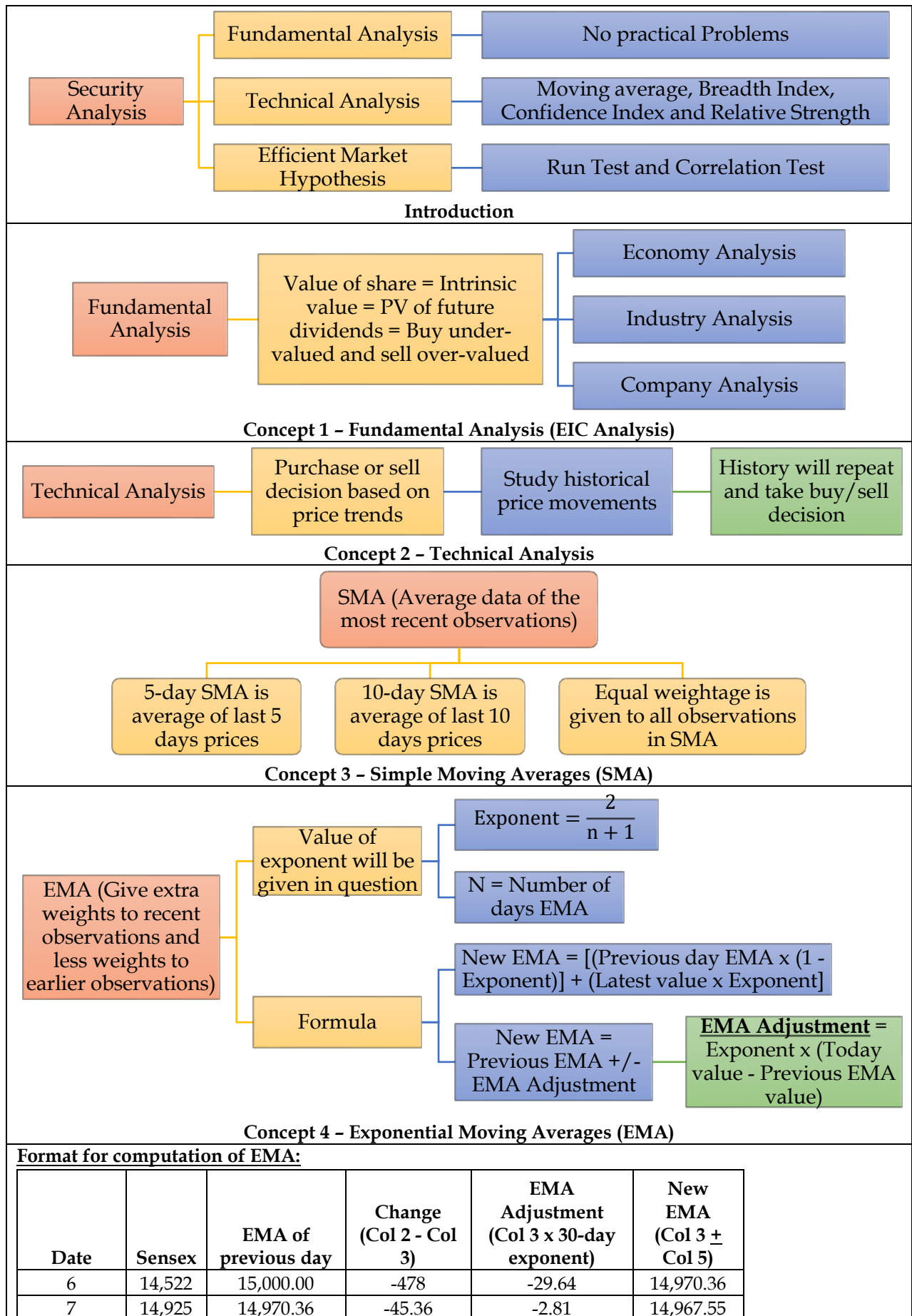
Concept 24 - SD for dependent and independent cash flows**Format for Concept 24**

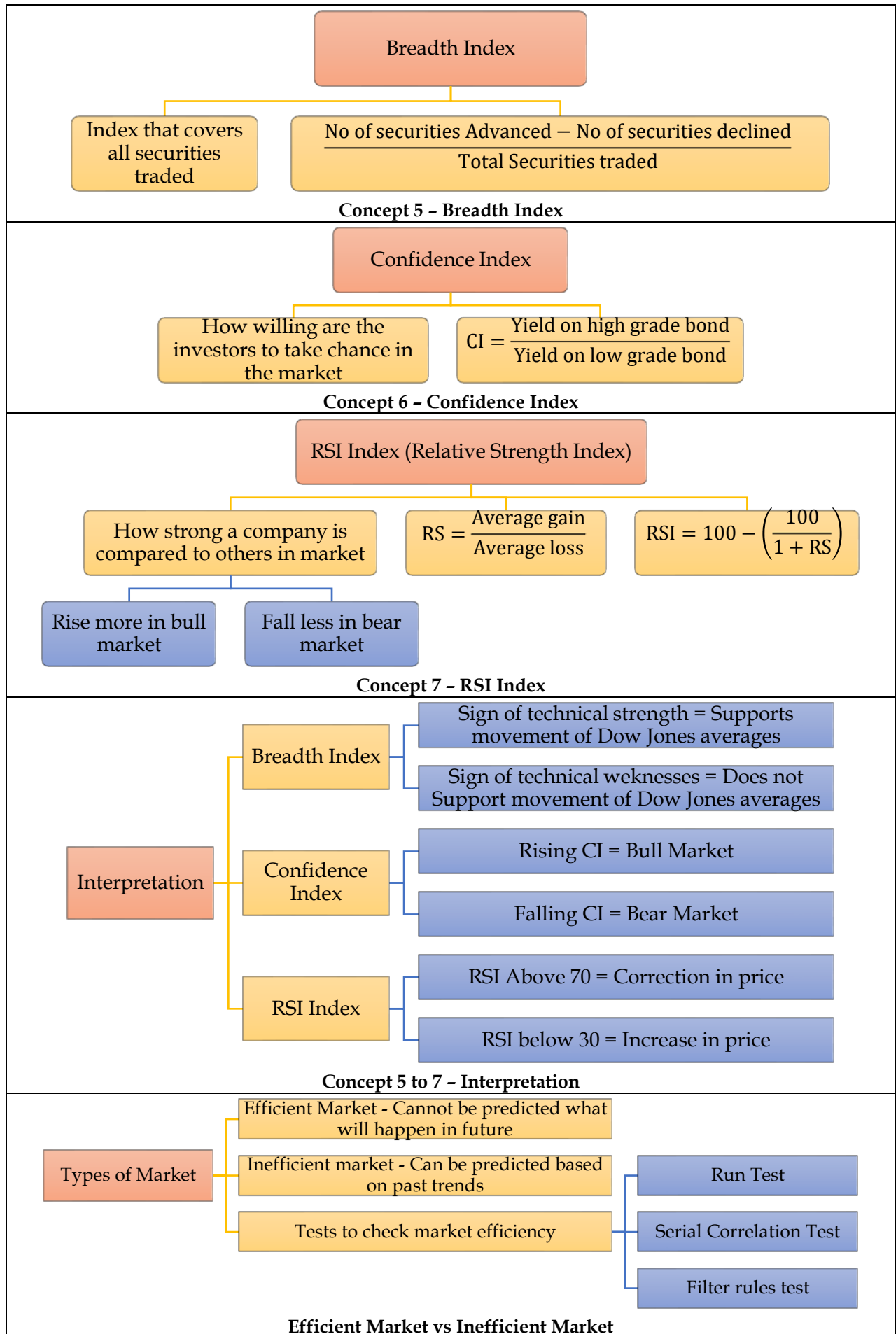
Year	SD	PVF	DSD (SD x PVF)	DSD ²

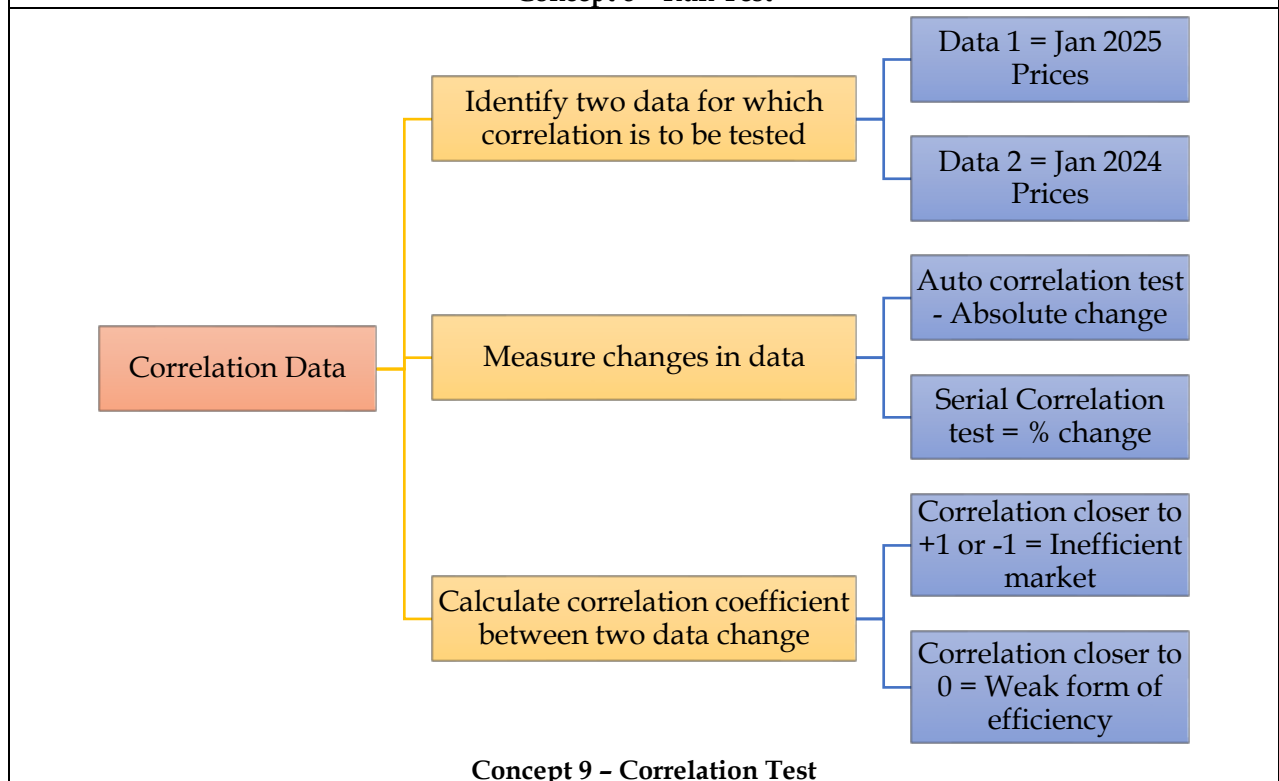
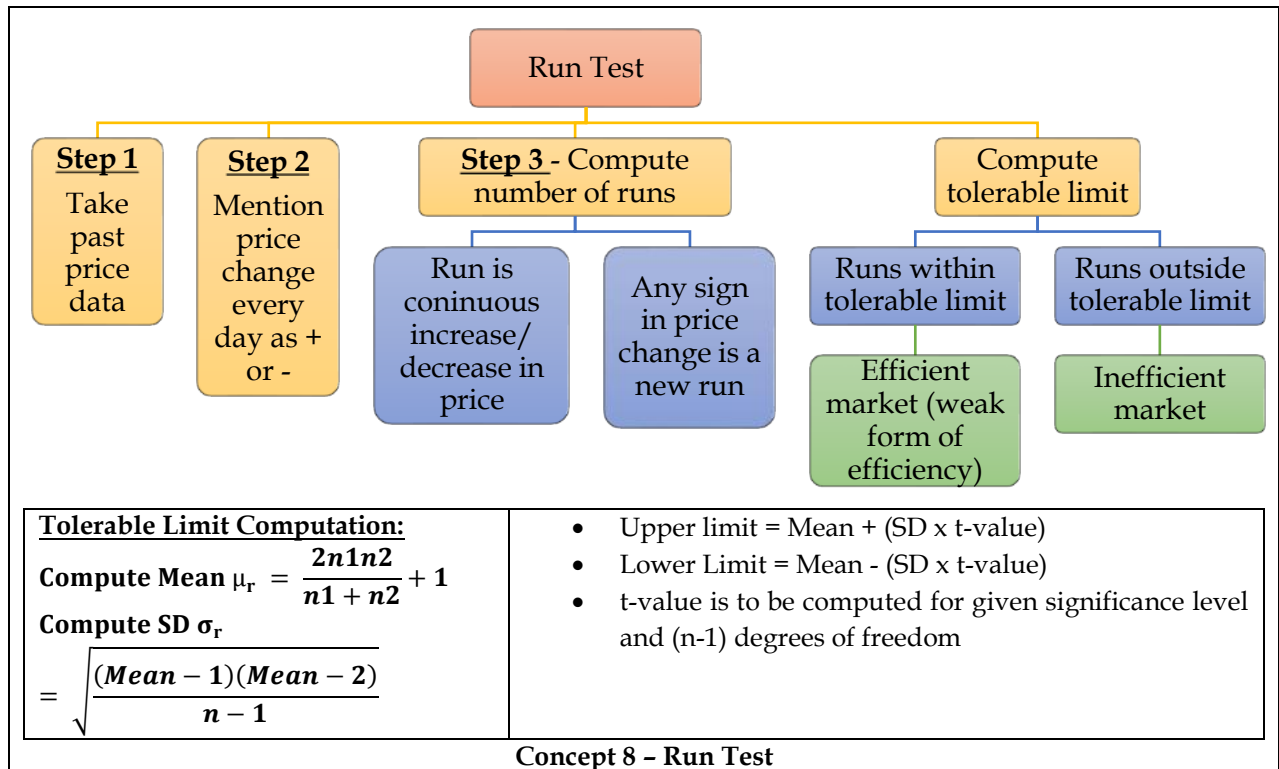
**Approach for Expected NPV and SD Computation****Concept 25 - Risk-Adjusted Discount Rate****Concept 26 - Certainty Equivalent Factor**



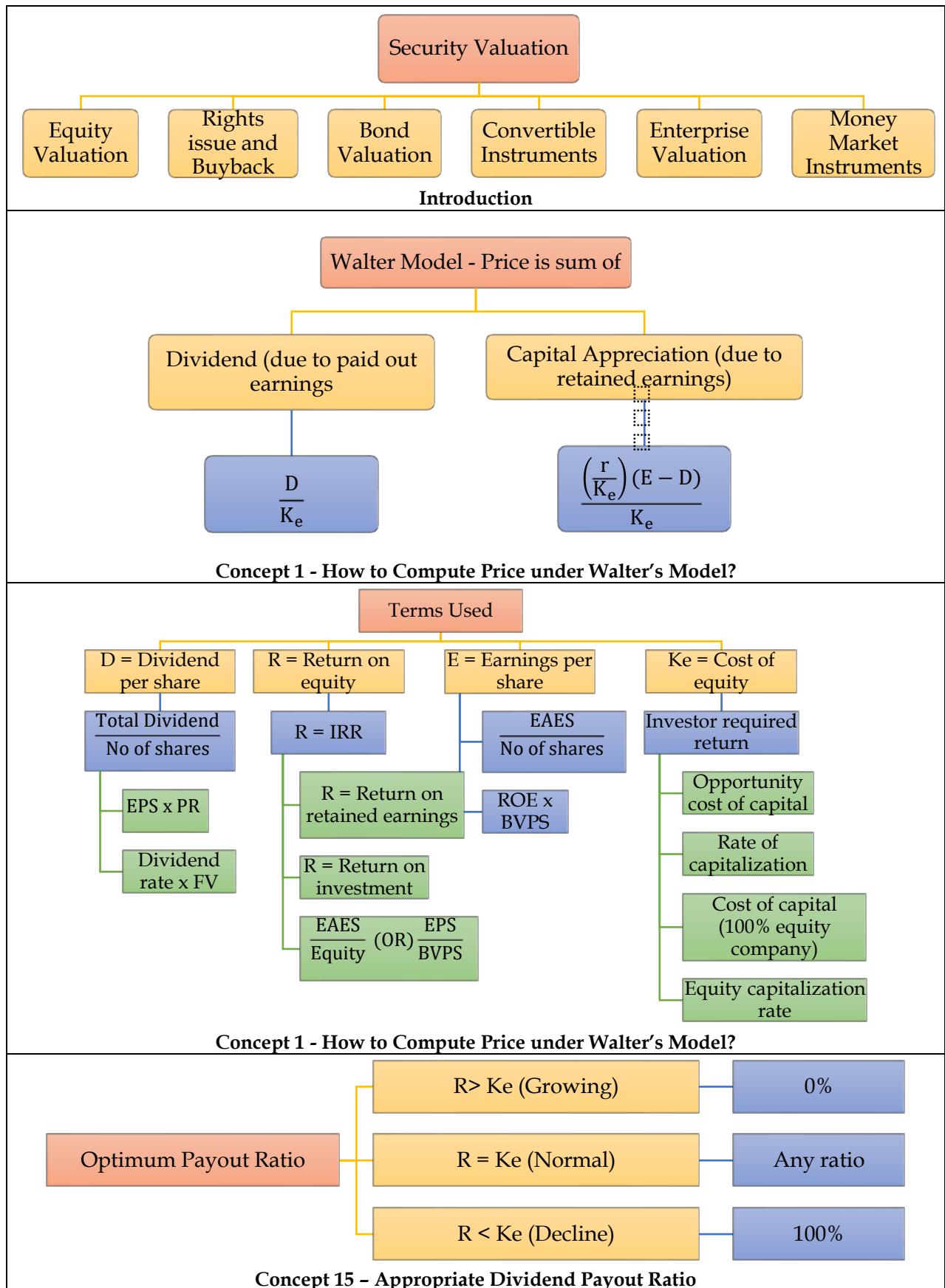


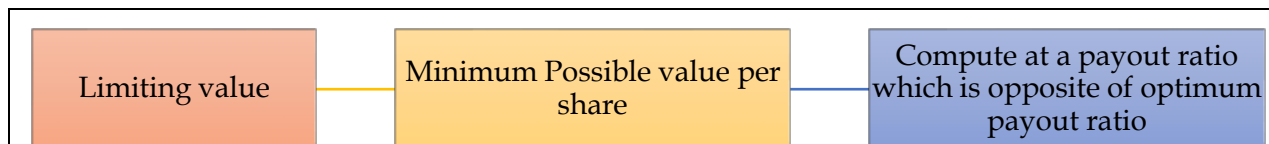
Chapter 4 - Security Analysis



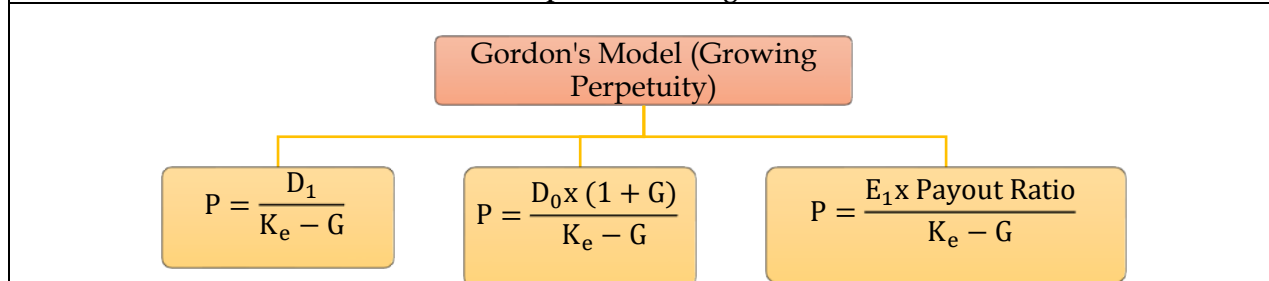


Chapter 5 – Security Valuation

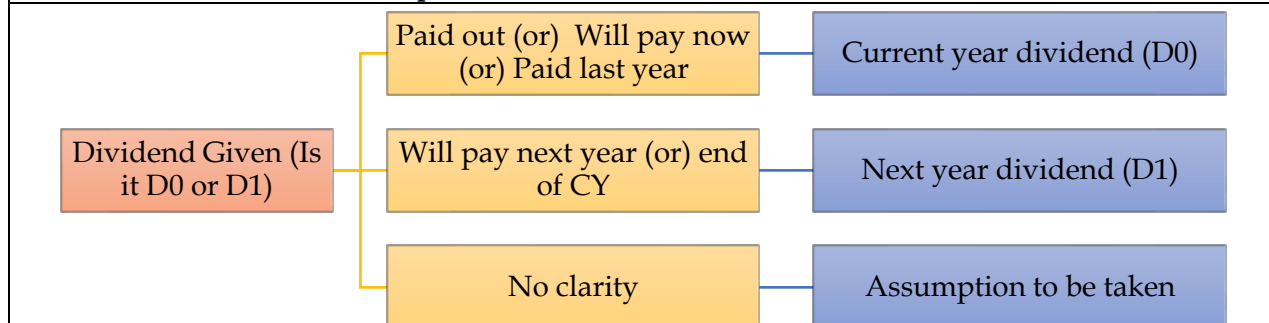




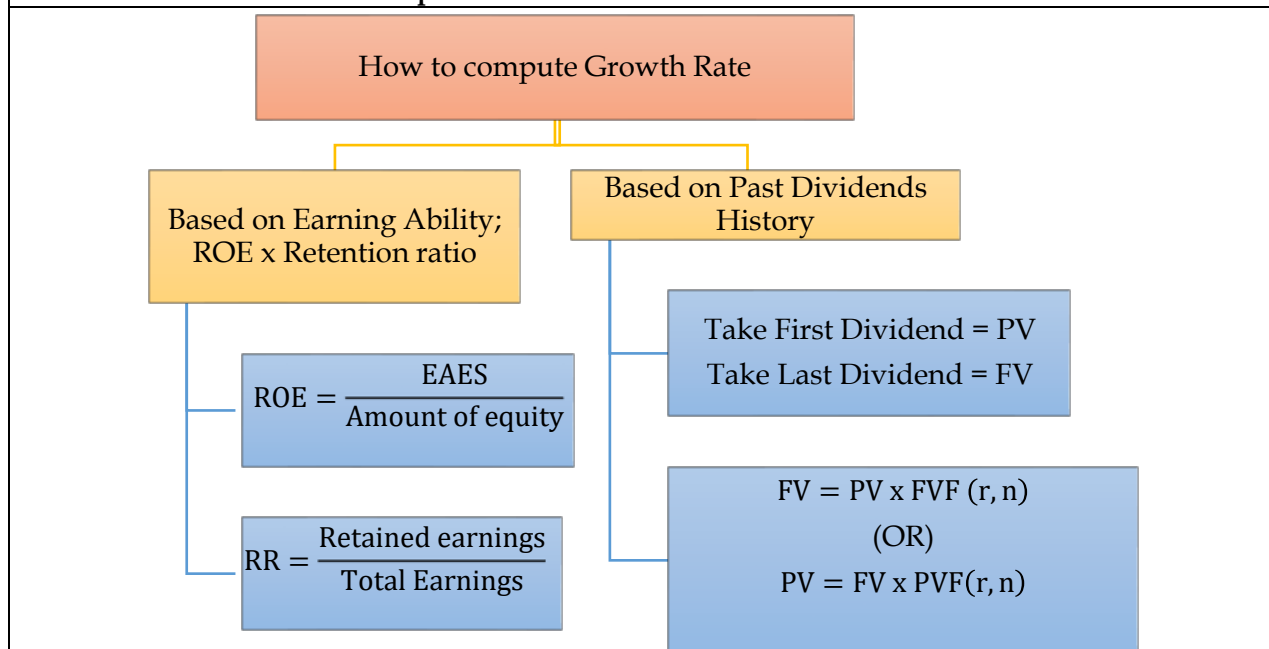
Concept 17 - Limiting Value



Concept 2 - How to value under Gordon's Model?



Concept 2 - How to value under Gordon's Model?



Concept 6 - How to Compute Growth Rate



Concept 7 - Growth Rate Based on EPS vs DPS

Time Value of Money (Most important concept of FM)

Future value
(Compounding)

$$FV = PV \times (1 + r)^n$$

Present value
(Discounting)

$$PV = \frac{FV}{(1+r)^n}$$

Future value
(Annuity)

$$AA \times FVAF(r, n)$$

Present value
(Annuity)

$$AA \times PVAF(r, n)$$

Perpetuity (normal
and growing)

$$\frac{CF_1}{\text{Discount rate} - \text{Growth Rate}}$$

Loan instalment
Amount

$$\frac{\text{Loan Amount}}{PVAF(r, n)}$$

Concept 8 - Time Value of Money

Return on Equity

$$\frac{EAES}{\text{Amount of equity}}$$

$$\frac{EPS}{BVPS}$$

$$BVPS = \frac{SC + \text{Reserves} - \text{Fictitious Assets}}{\text{No of shares}}$$

Concept 9 and 10 - How to Compute Return on Equity

Cost of Equity (What equity shareholder wants) = Required return on equity

Dividend
Paying
Company

$$K_e = \frac{D_1}{P_0 - F} + G$$

D1 = Dividend
of Next year

Po = Issue
price (or CMP)

F = Flootation
cost

G = Growth
Rate

Non-Dividend
Paying Company

$$K_e = R_f + \text{Beta} \times (R_m - R_f)$$

Rf = Risk Free
Rate

Rm = Market
Return

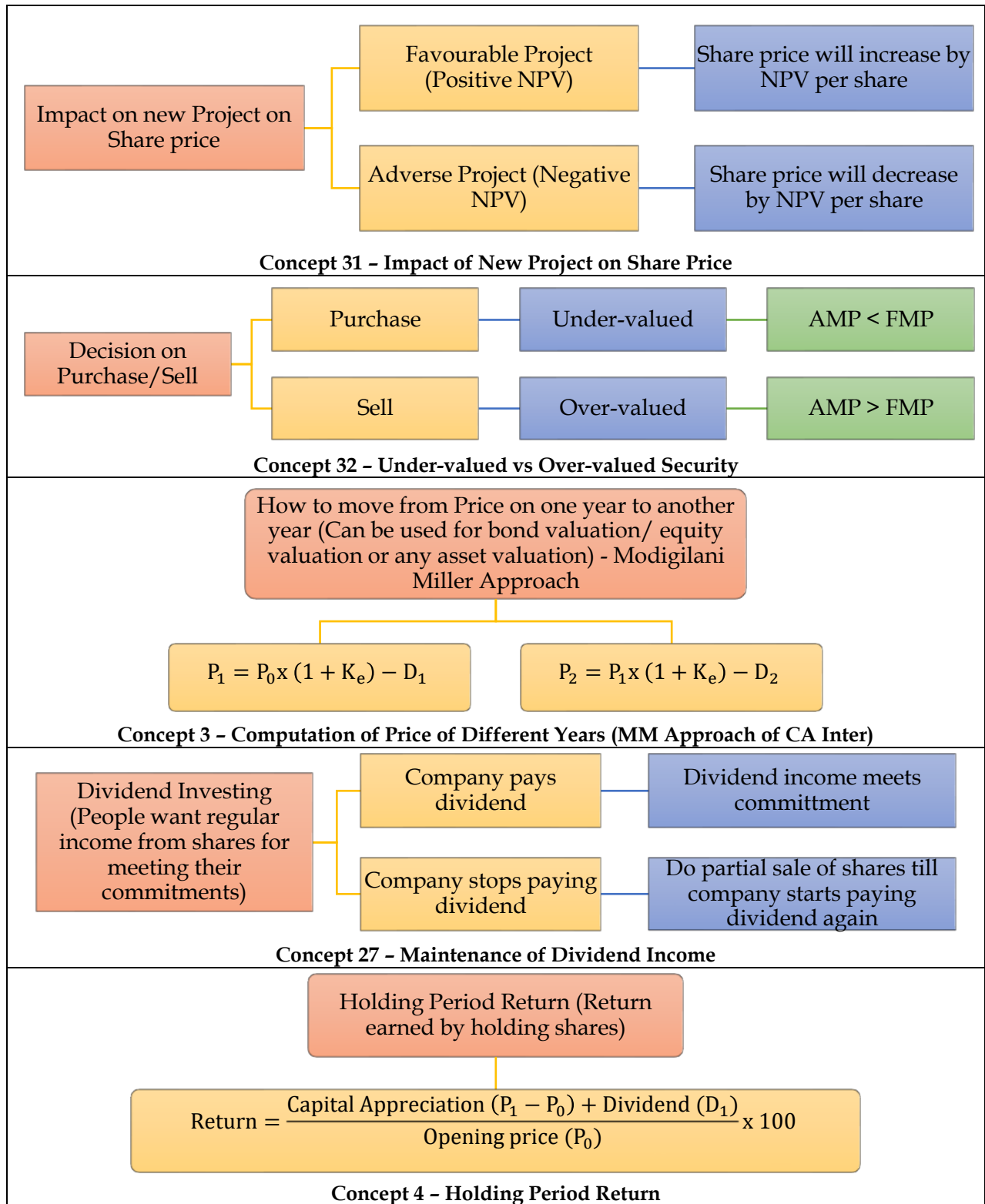
Rm - Rf = Risk
Premium of
market

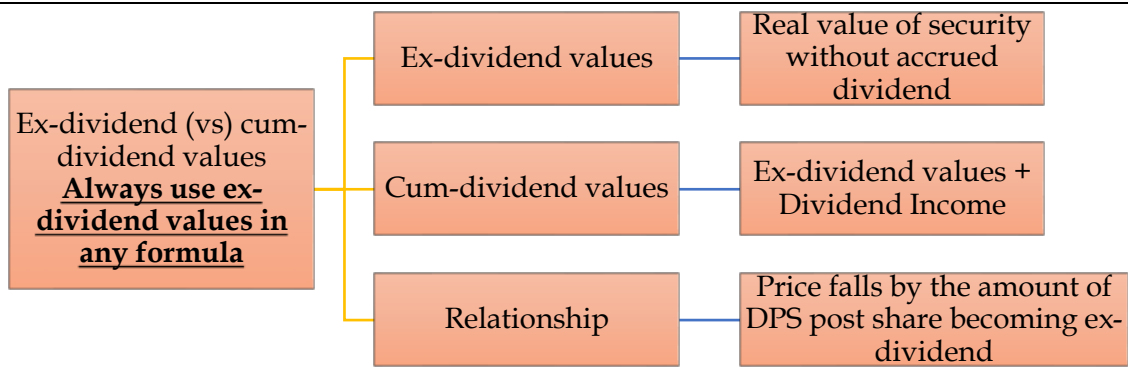
Based on PE

$$K_e = \frac{1}{PE}$$

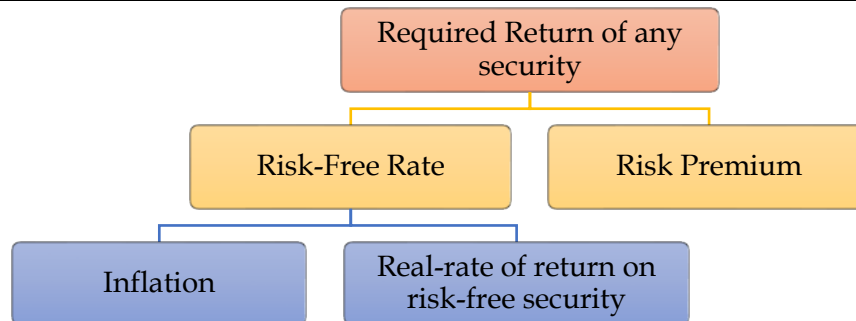
Useful if there is
100% Payout

Concept 11, 12 and 14 - Computation of Cost of Equity



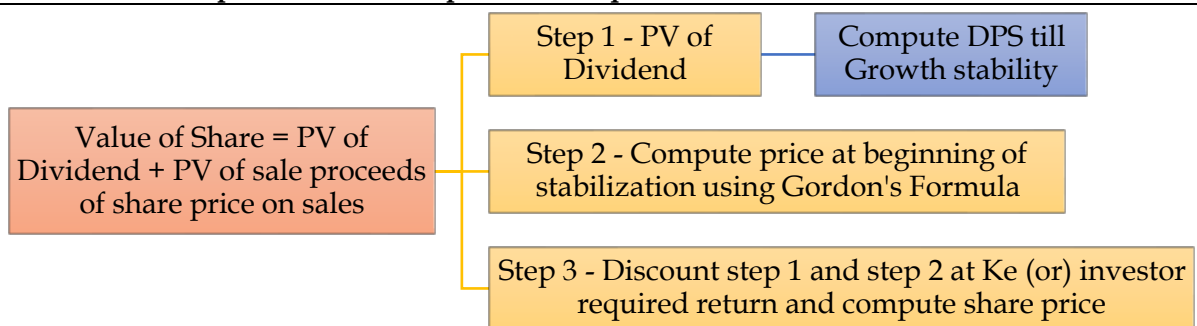


Concept 5- Ex-Dividend vs Cum-Dividend Price

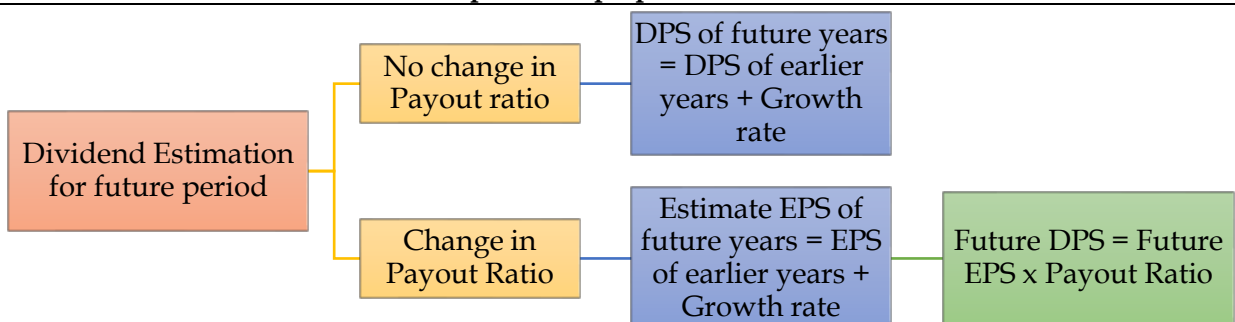
**Note:**

- Real-return of any security = Normal return of security - Inflation rate
- Inflation premium forms part of Risk-free Rate and hence any increase in inflation premium will increase the Risk-free Rate

Concept 33 and 34 - Component of Required Return and Inflation Premium



Concept 18 - Step-up Growth Model



Concept 20 - Estimation of Future Dividends

Linear Fall in Growth Rate (Growth rate will stabilize from higher number (example 20%) to lower number (example 10%))

Number of years of fall given

$$\text{Annual fall in GR} = \frac{\text{Higher rate} - \text{Lower rate}}{\text{Number of years of fall}}$$

Number of years of fall not given

Take 1% fall every year

Concept 19 - Linear Fall in Growth Rate

H Model - Price is sum of

Dividend at normal growth rate

$$\frac{D_0 \times (1 + \text{Normal GR})}{K_e - \text{Normal GR}}$$

Extra price for higher growth

$$\frac{D_0 \times (\text{High GR} - \text{Normal GR}) \times \frac{\text{Transition Period}}{2}}{K_e - \text{Normal GR}}$$

Concept 26 - H Model valuation

Fair Price = EPS x PE Multiple

PE Multiple can be given in question

Not Given

100% Payout

$$PE = \frac{1}{K_e}$$

BPVS = MPS

$$PE = \frac{1}{ROE}$$

Concept 28 - PE Multiple Approach

Earning Growth Model

$$\frac{E_1}{K_e - G}$$

Concept 29 - Earning Growth Model

Consider CMP as FMP and substitute in Gordon Formula

$$P_1 = \frac{D_0 \times (1 + G)}{K_e - G}$$

Concept 21 - Implied Growth Rate by CMP

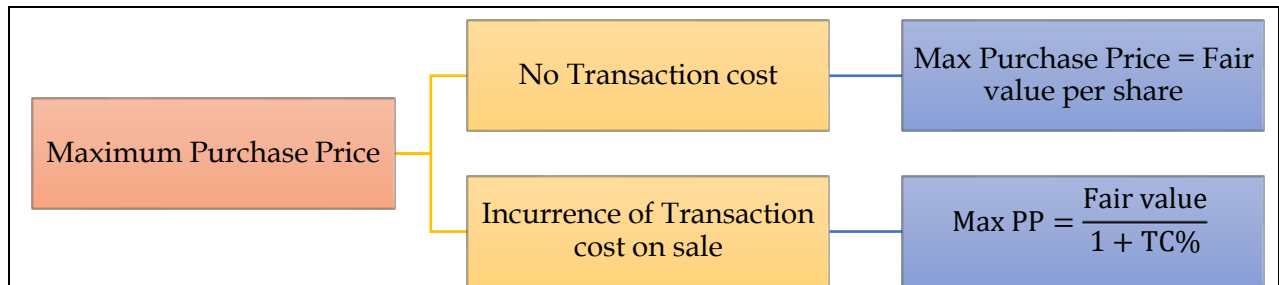
Bonus issue (one share will become 1.2 or 1.5 shares on last date)

Share price = PV of Dividend + Sale price of shares

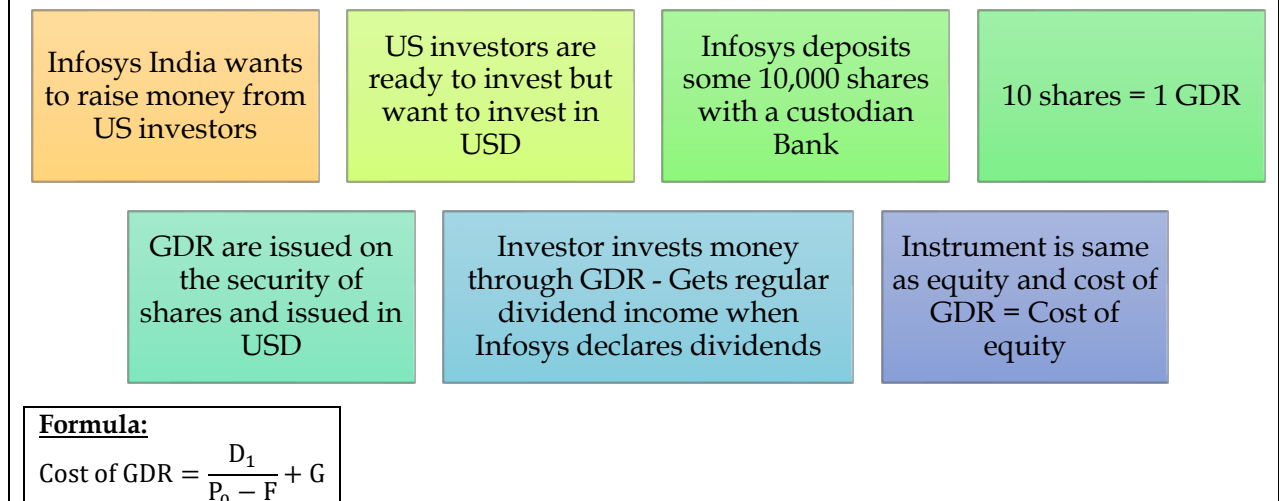
Sale price of shares = Sale proceeds - Transaction cost

Sale proceeds = Higher number of shares x Selling Price

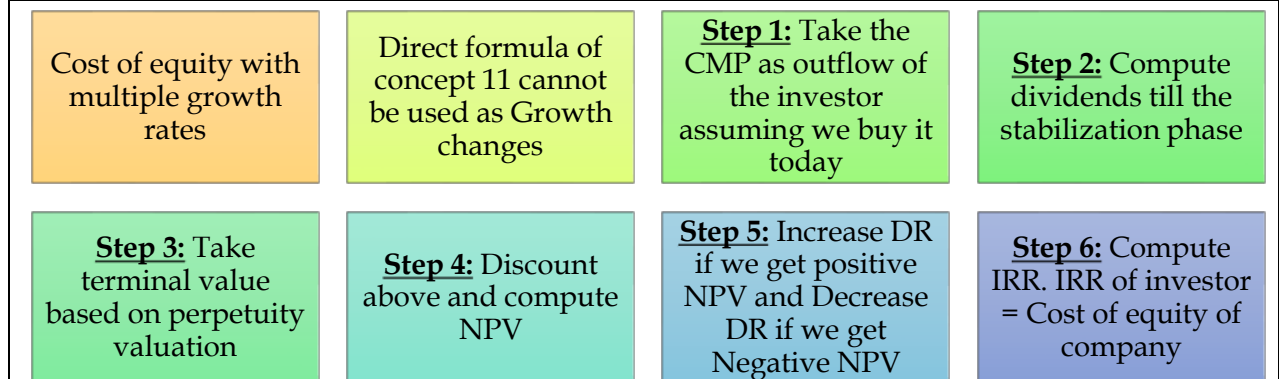
Concept 24 - Impact on Bonus on Terminal value



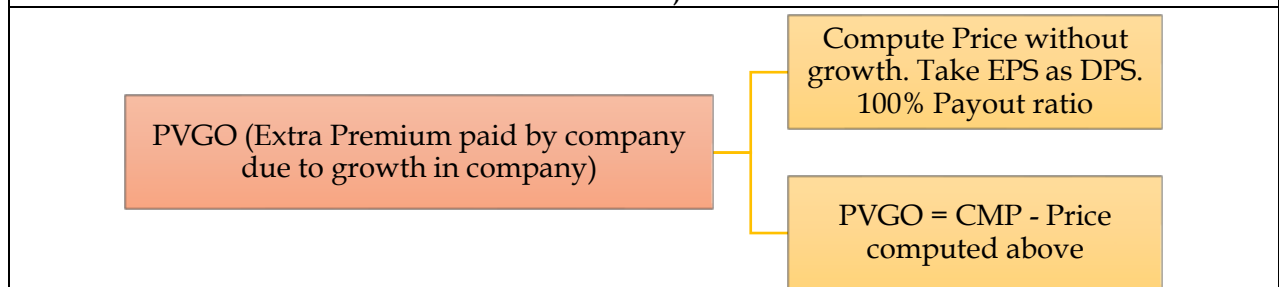
Concept 25 – Impact of Transaction Cost on Maximum Purchase Price



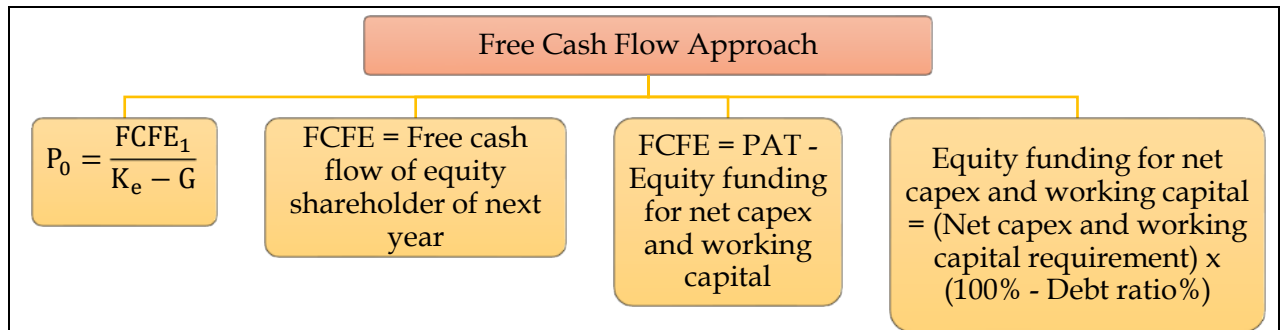
Concept 16 – GDR



Concept 13 – Computation of Cost of Equity (Dividend Paying Company with Multiple Growth Rates)

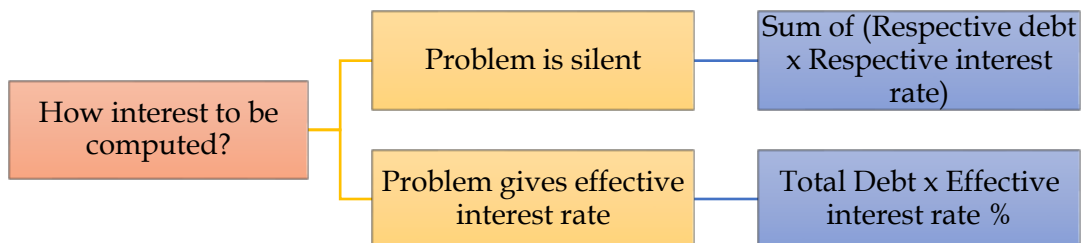


Concept 22 – Present Value of Growth Opportunities



Concept 30 - Free Cash Flow Approach

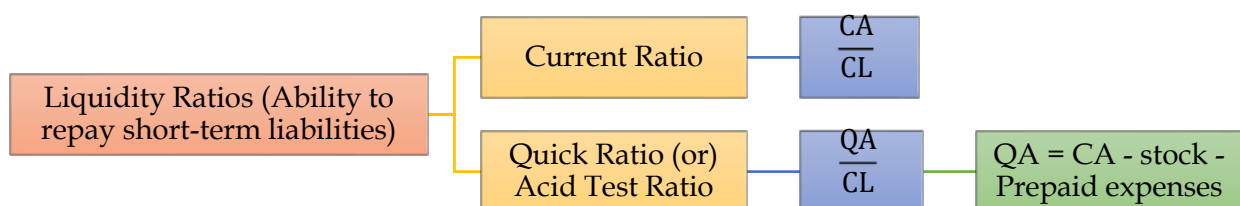
Particulars	Amount
Sales	XXX
Less: Cost of Goods Sold	(XXX)
Gross Profit	XXX
Less: Operating expenses (Selling and admin expenses)	XXX
Operating Profit/EBIT	XXX
Less: Interest expenses (Note 1)	(XXX)
EBT	XXX
Less: Tax	(XXX)
EAT	XXX
Less: Preference Dividend [Preference capital x Coupon %]	(XXX)
Earnings available to equity shareholders	XXX
No of equity shares	XXX
EPS [EAES/No of equity shares]	XXX



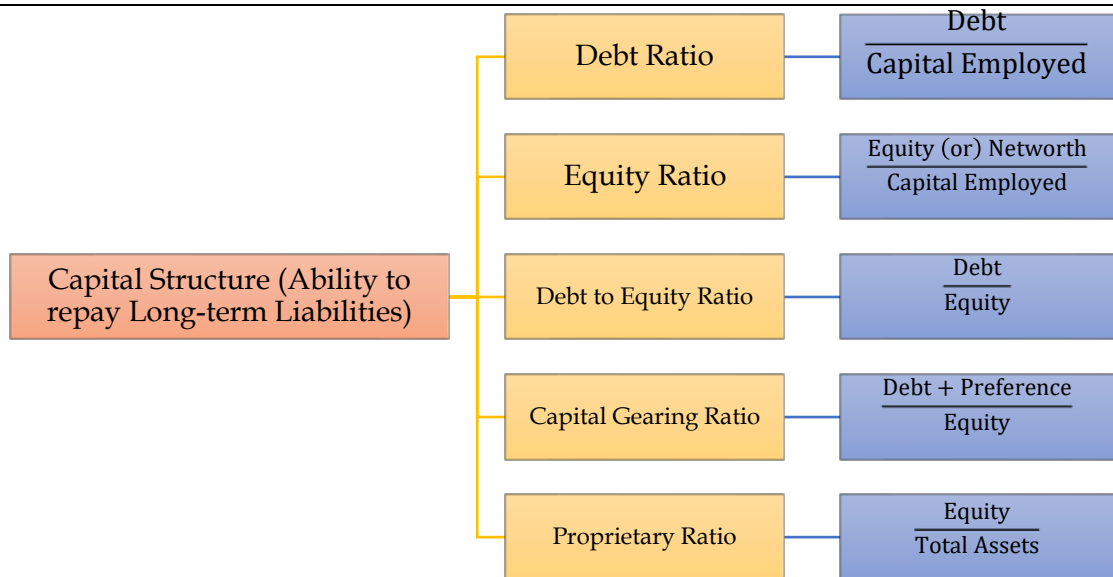
Concept 35 - Format of Income Statement

Types of Ratios	Liquidity Ratios/Short term solvency Ratios
	Capital Structure/ Long term Solvency Ratios
	Profitability ratios related to sales
	Coverage Ratios
	Profitability ratios related to return on assets/ investments
	Profitability ratios from owners point of view
	Turnover Ratios

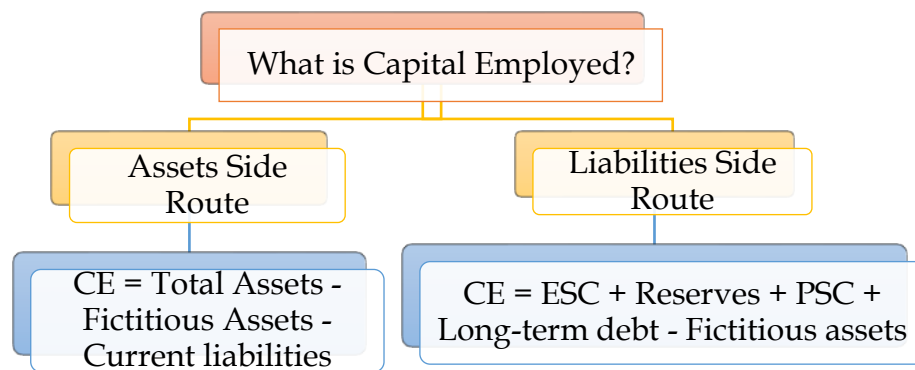
Concept 36 - Important Ratios



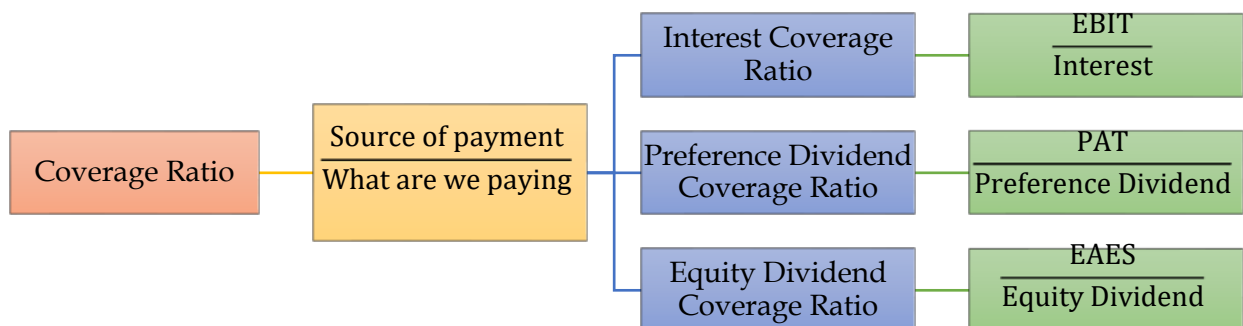
Concept 36 - Liquidity Ratios



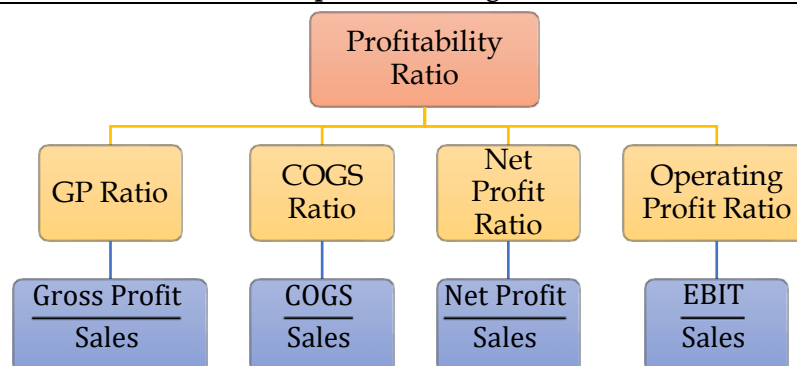
Concept 36 - Capital Structure Ratio/Long Term Solvency Ratio



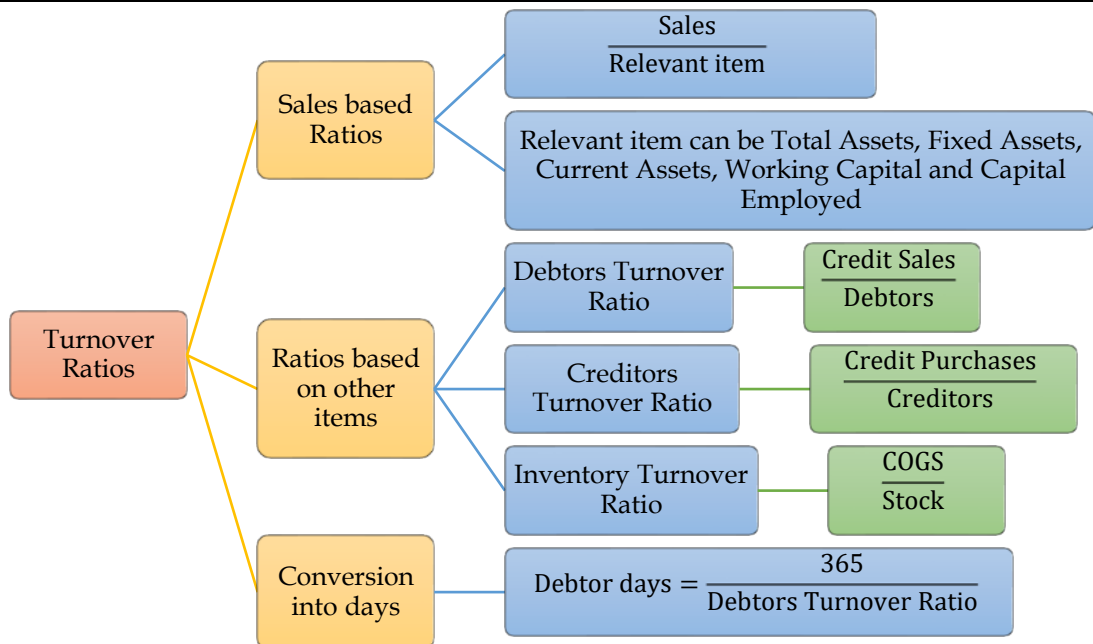
Concept 36 - Capital Structure Ratio/Long-Term Solvency



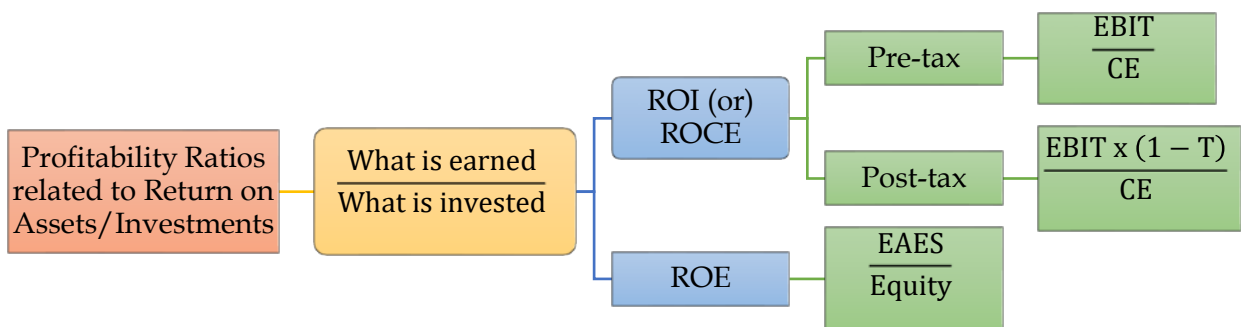
Concept 36 - Coverage Ratio



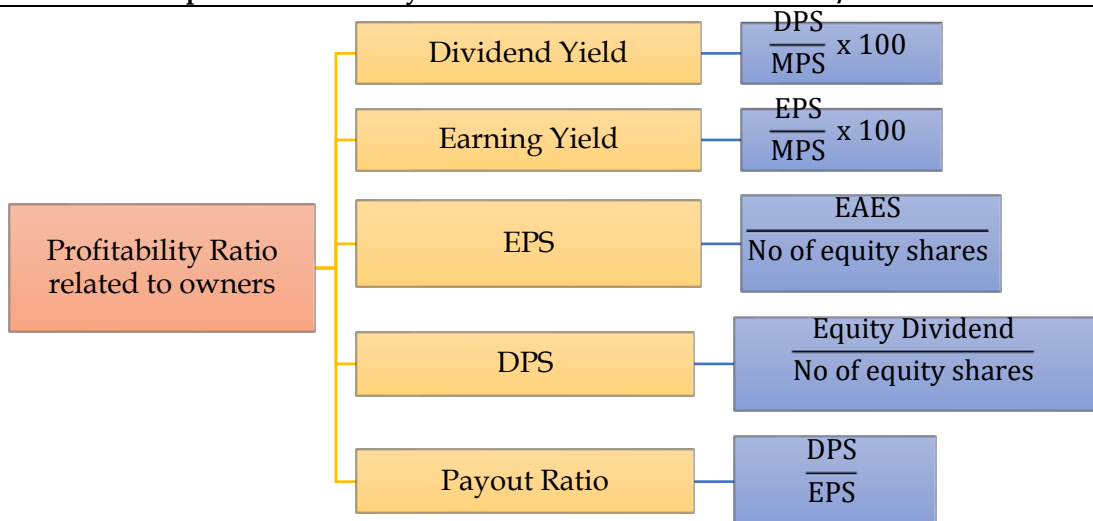
Concept 36 - Profitability Ratios related to Sales



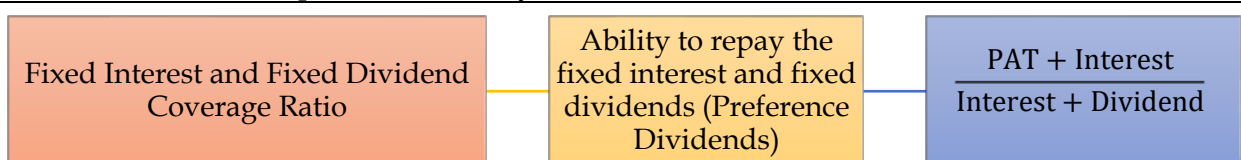
Concept 36 - Turnover Ratios used to assess effectiveness of usage of resources



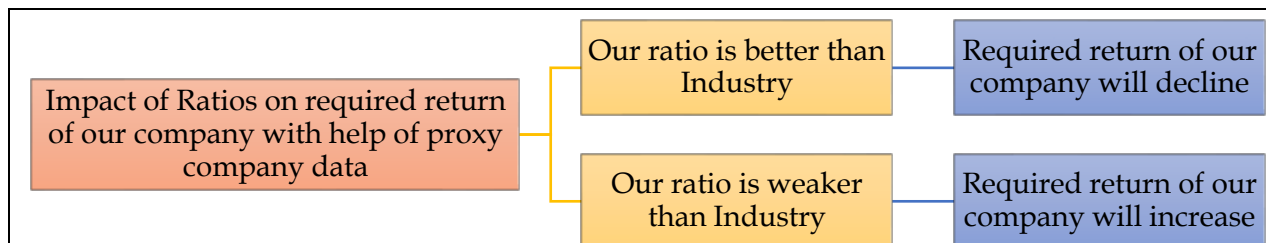
Concept 36 - Profitability Ratios related to Return on Assets/Investments



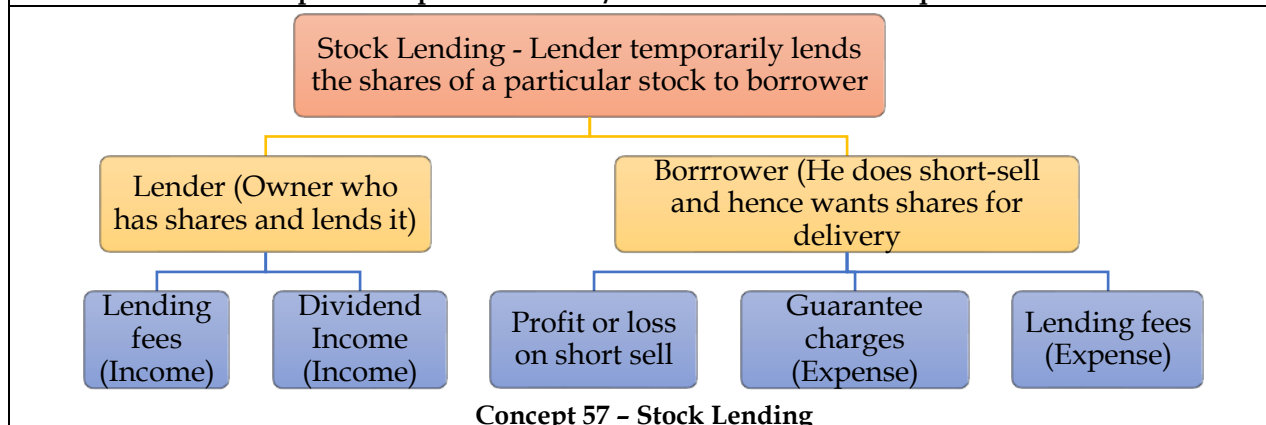
Concept 36 - Profitability Ratios related to Owners Point of View



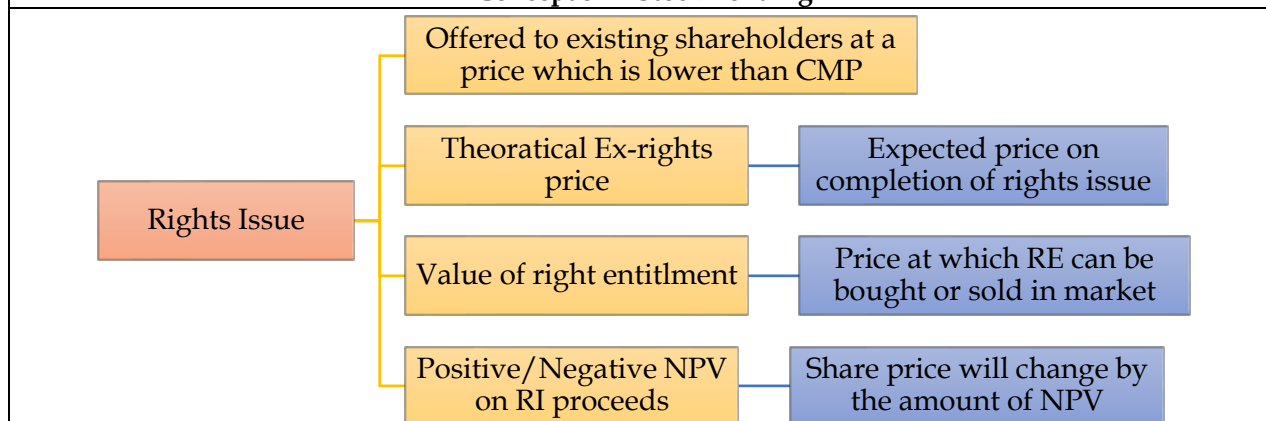
Concept 37 - Fixed Interest and Fixed Dividend Coverage Ratio



Concept 38 – Impact of Adverse/Favourable Ratios on Required Yield



Concept 57 – Stock Lending

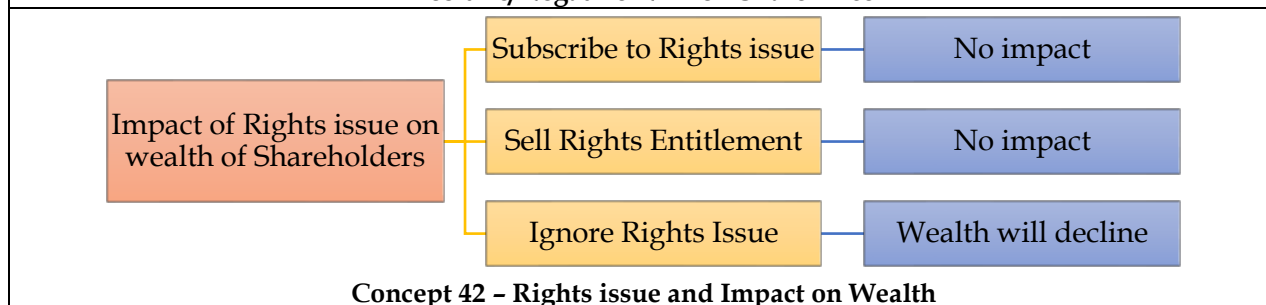


Formula:

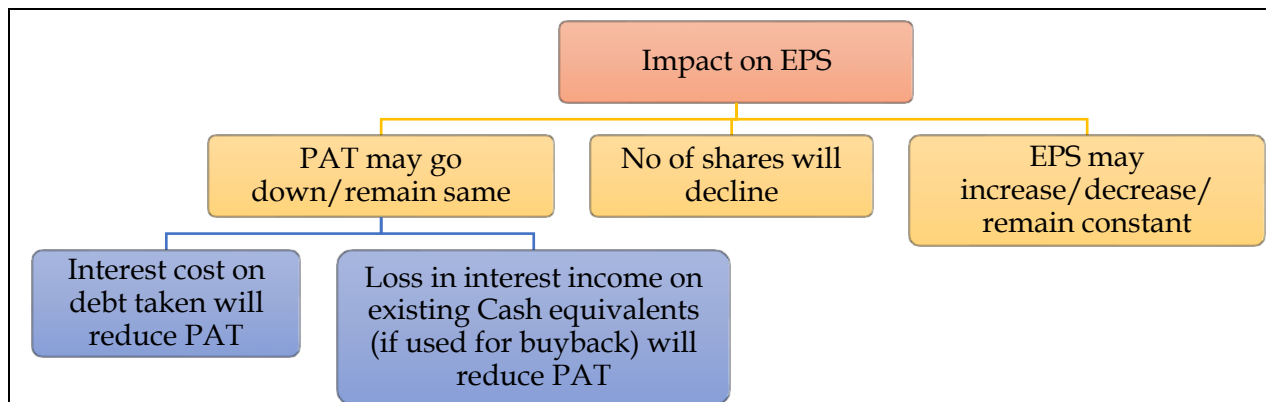
$$\text{Theoretical ex – rights price} = \frac{(\text{Existing shares} \times \text{Existing Price}) + (\text{New shares} \times \text{Rights Price}) + \text{NPV}}{\text{Existing shares} + \text{New shares}}$$

Value of one right	Theoretical ex-rights price - Rights issue price	
Value of one right [per share]	$\frac{\text{Value of one right}}{\text{Rights Ratio}}$	

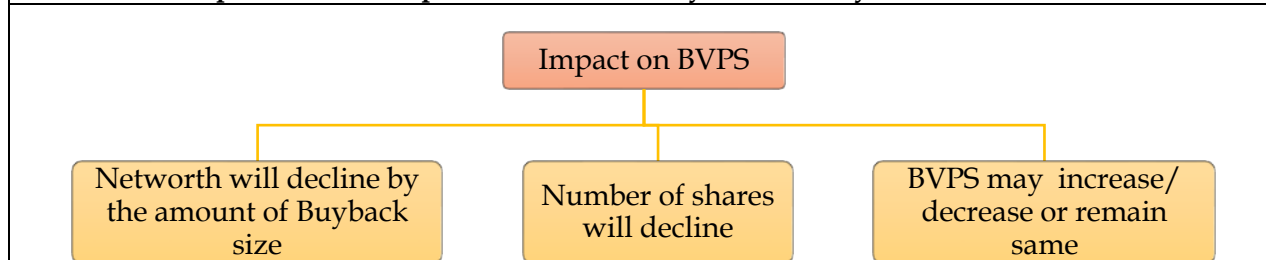
Concept 40 and 41 and 43 – Theoretical Ex-Rights Price, Value of one Right and Impact of Positive/Negative NPV on Share Price



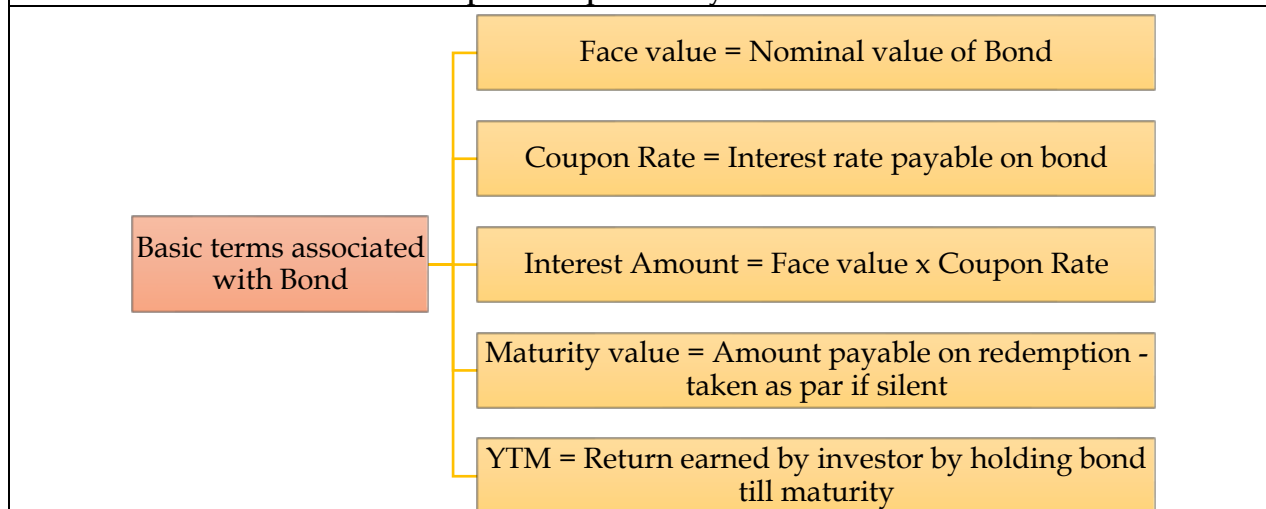
Concept 42 – Rights issue and Impact on Wealth



Concept 44 and 45 - Impact on EPS due to Buyback and Buyback funded with debt

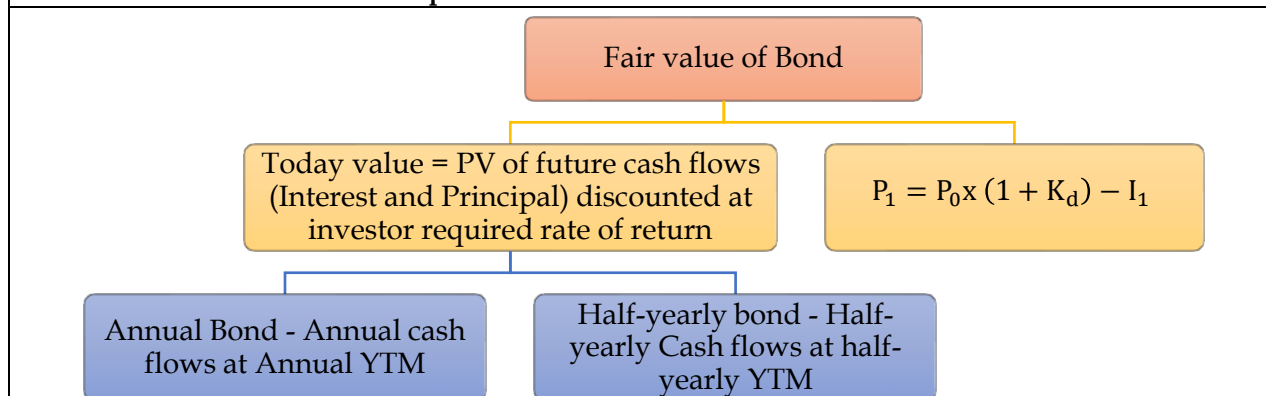


Concept 46 - Impact of Buyback on BVPS

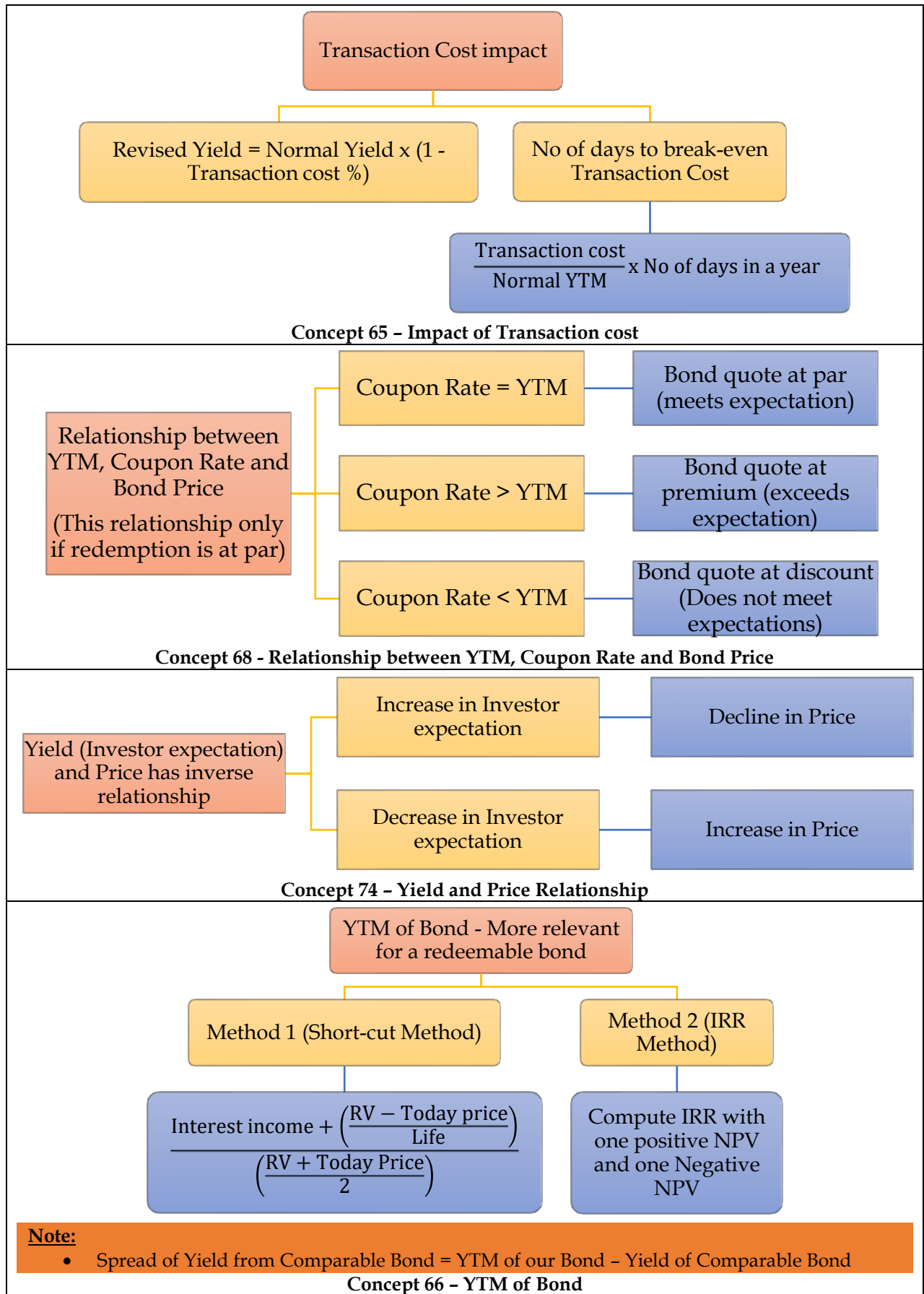
**Note:**

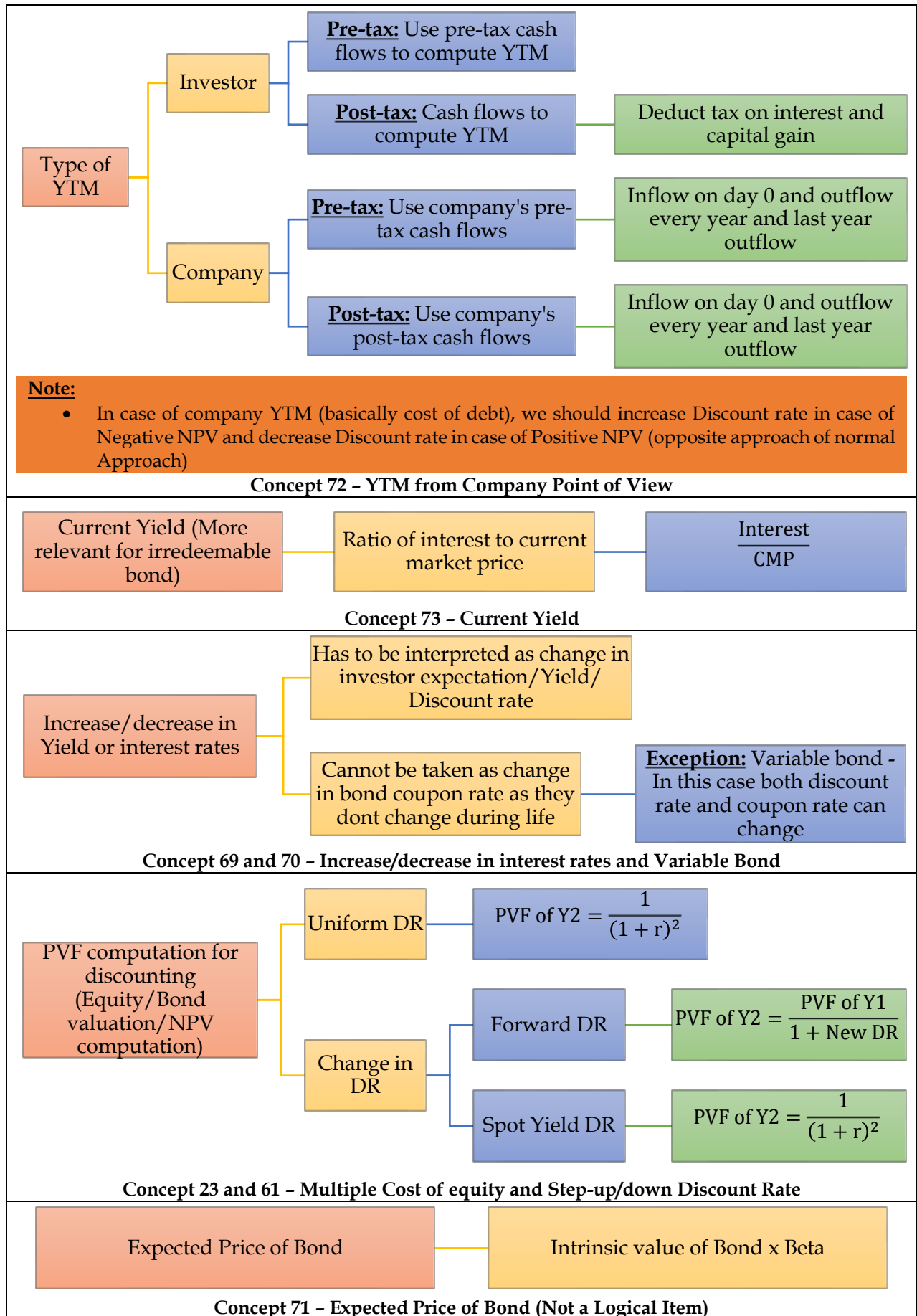
- YTM can also be called as Cost of debt/ Discount rate/ Required return of investor/ Expected return/ Opportunity cost/ Market rate of interest/ prevailing interest rate of similar bond/ Going rate of interest

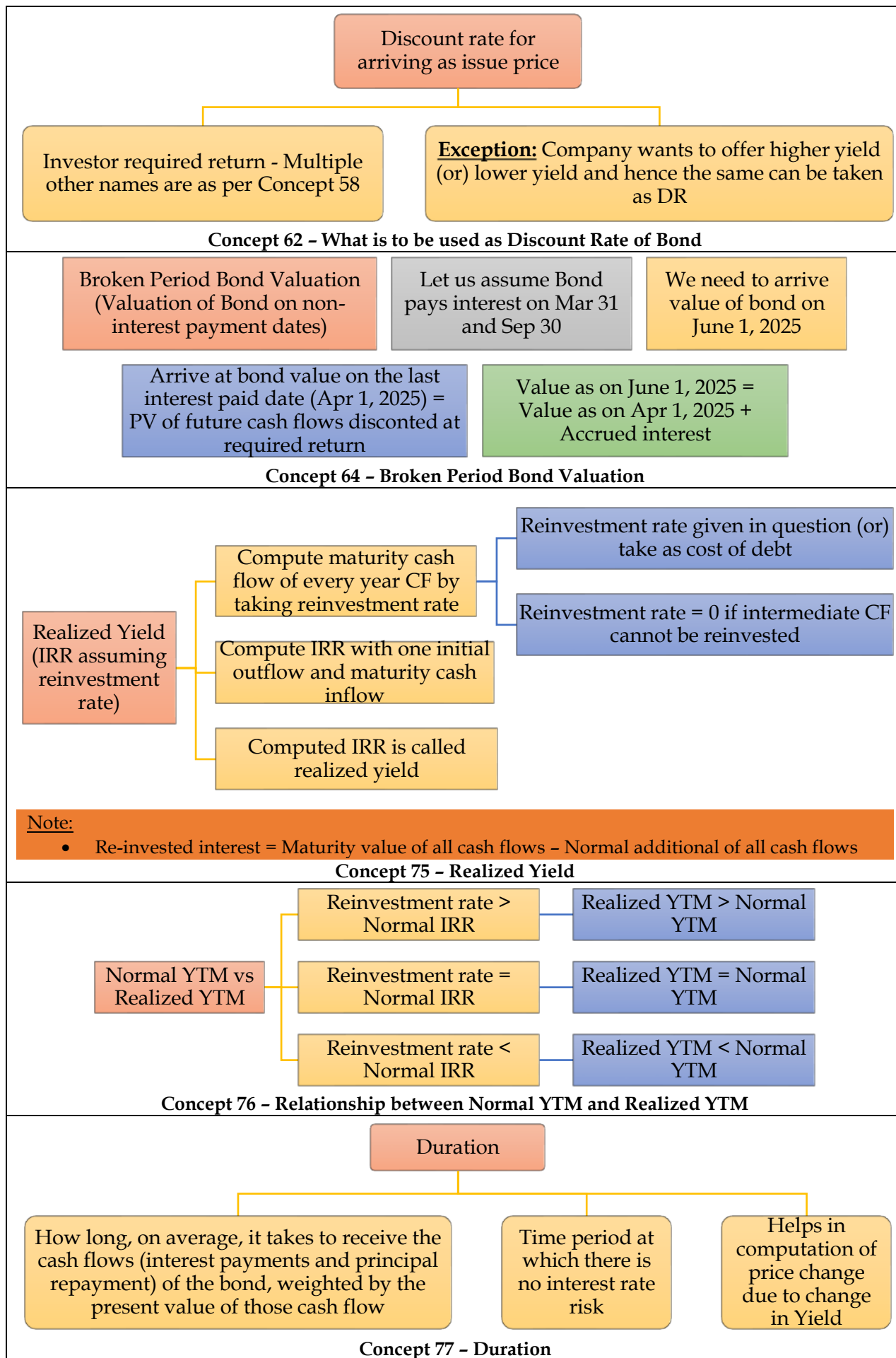
Concept 58 - Basic Terms Associated with Bond



Concept 59 - Valuation of Bond and Concept 60 - Half-Yearly Bond

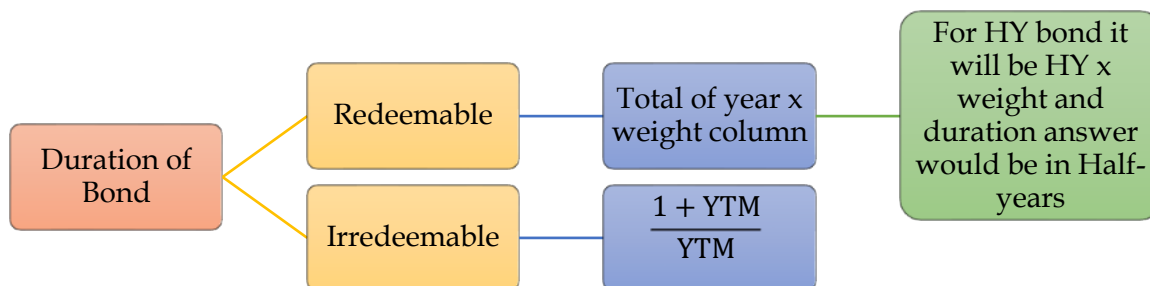




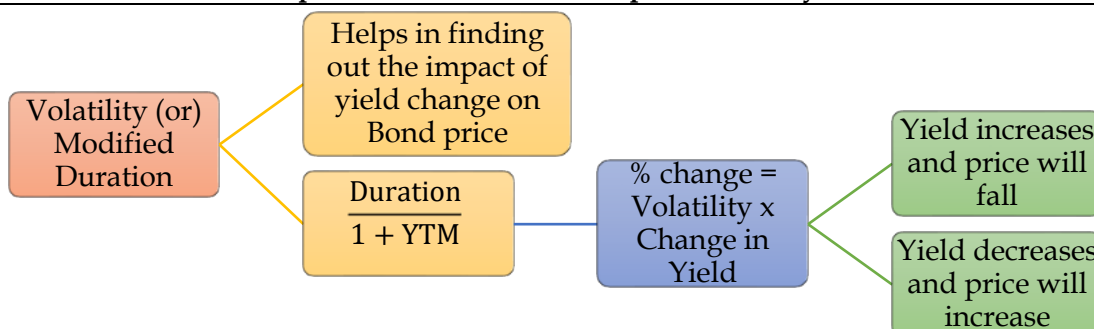
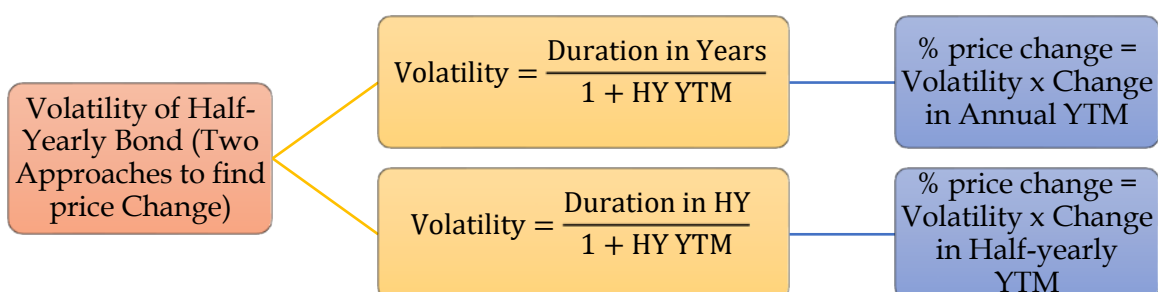
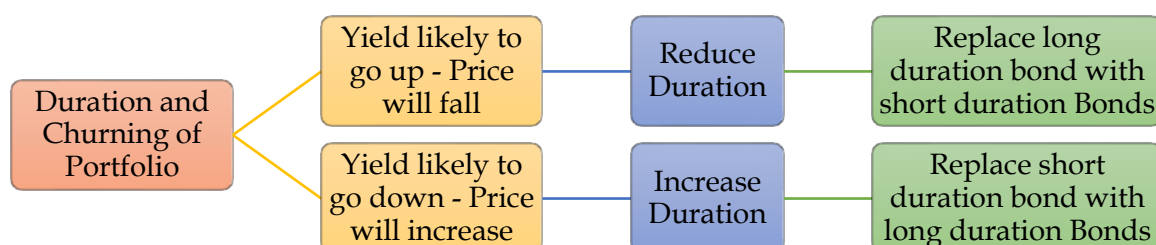


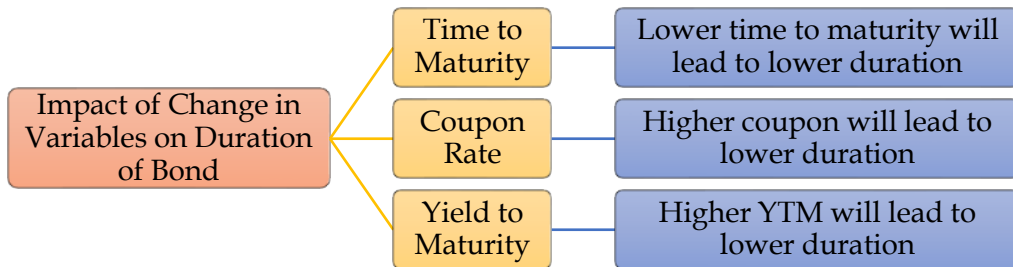
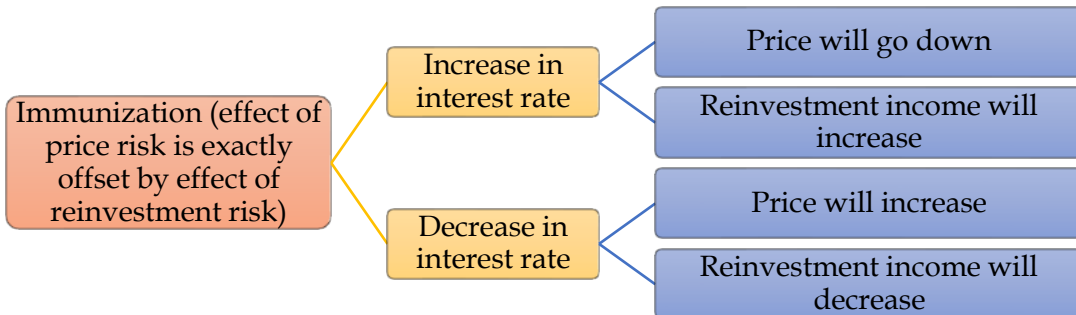
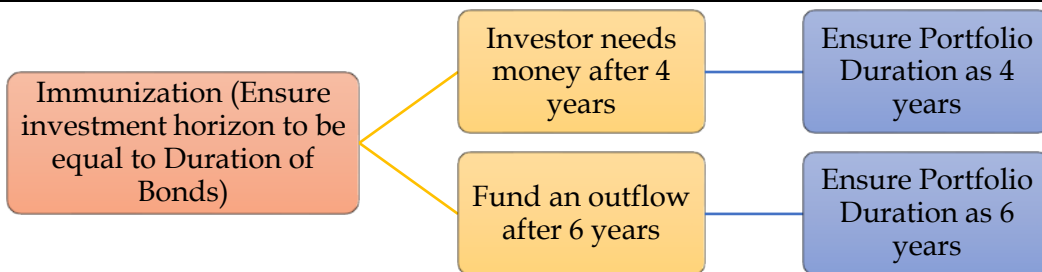
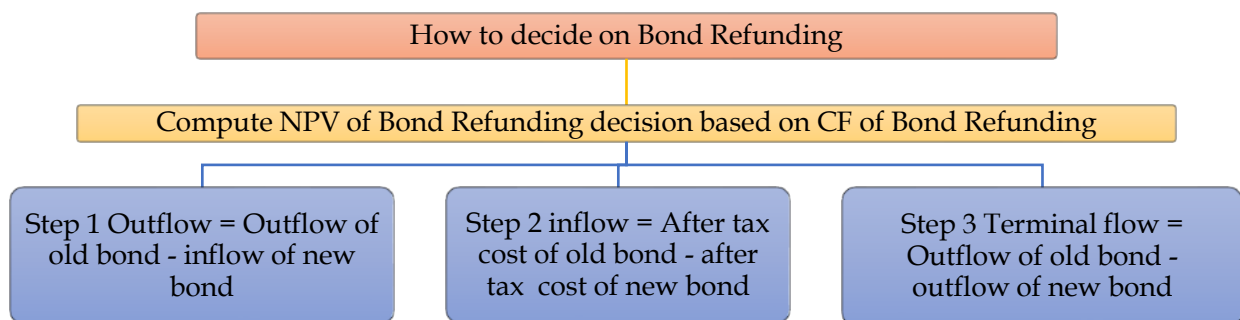
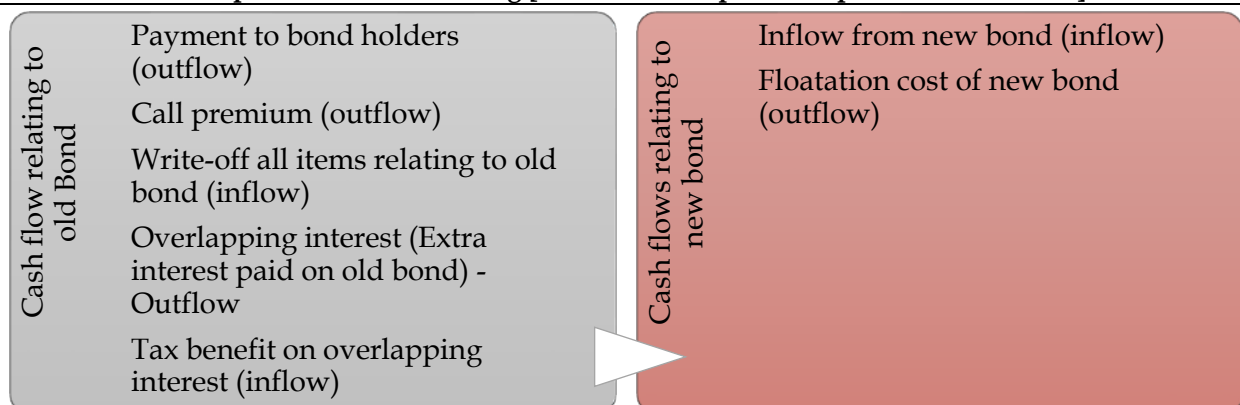
Format for computation of duration (assuming a 5-year bond)

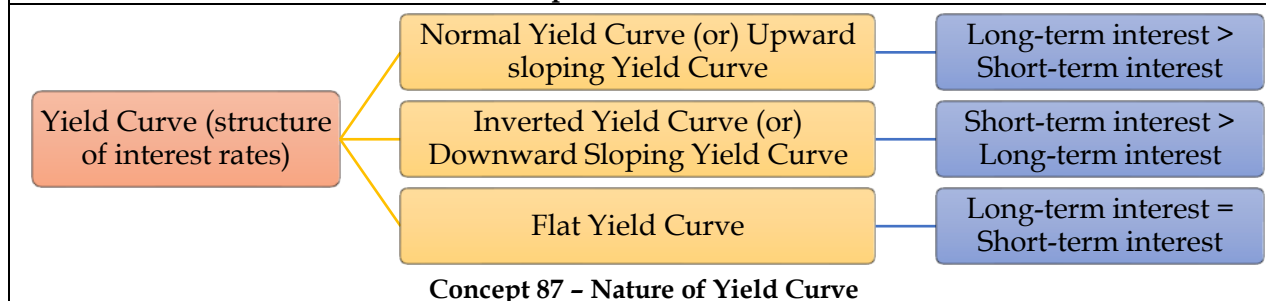
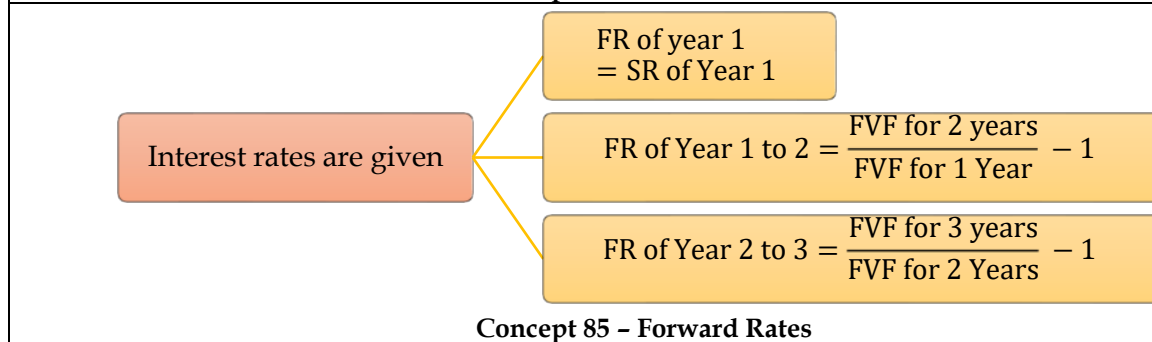
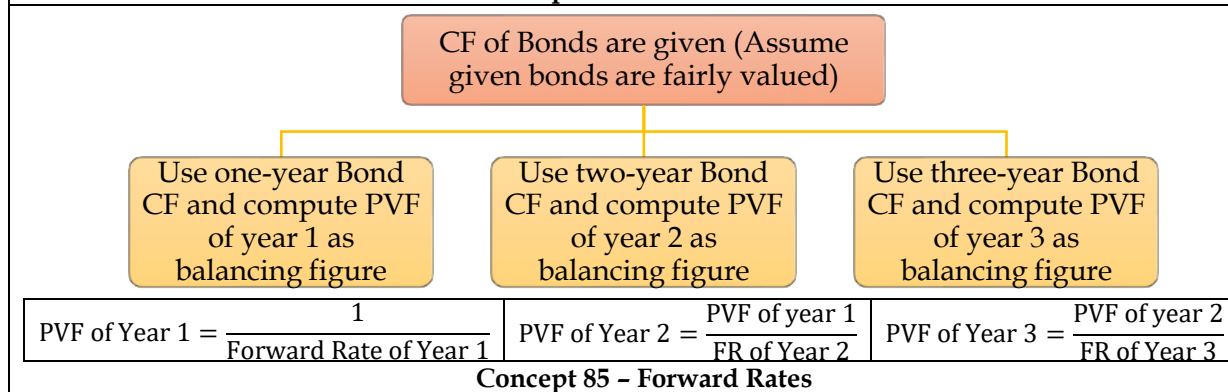
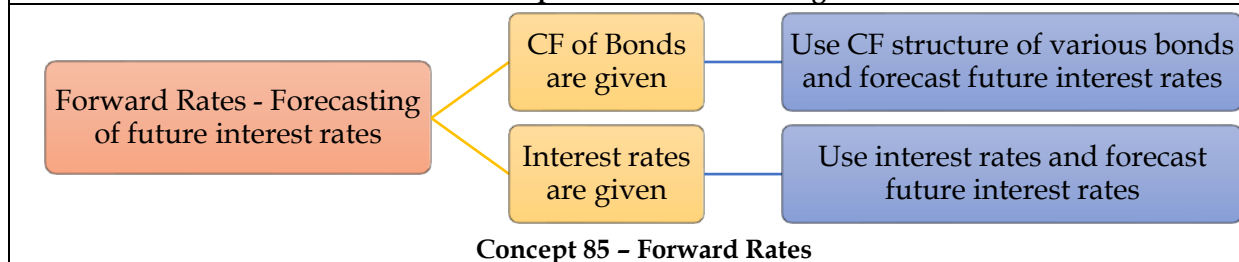
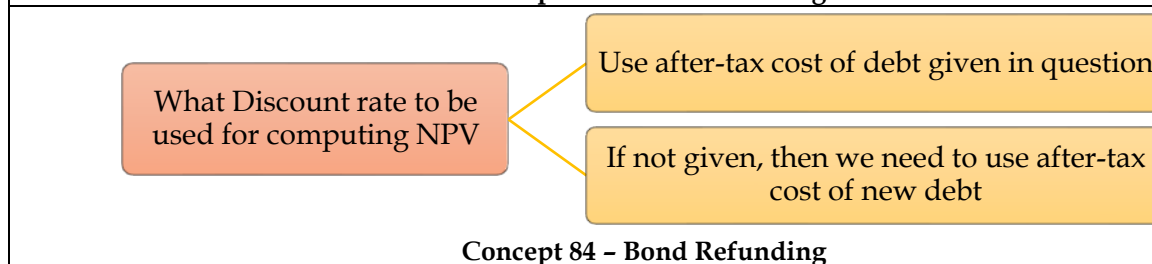
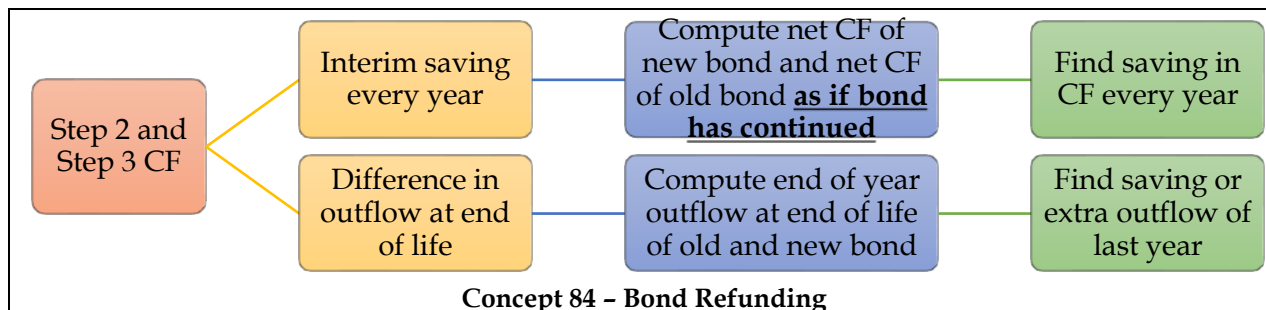
Year	Cash flow	PVF @ YTM	DCF	Weight	Year x Weight
1	Interest			DCF	
				Total DCF	
2	Interest			DCF	
				Total DCF	
3	Interest			DCF	
				Total DCF	
4	Interest			DCF	
				Total DCF	
5	Interest + Principal			DCF	
				Total DCF	
Total			Total = Price of Bond	1.000	Duration of bond

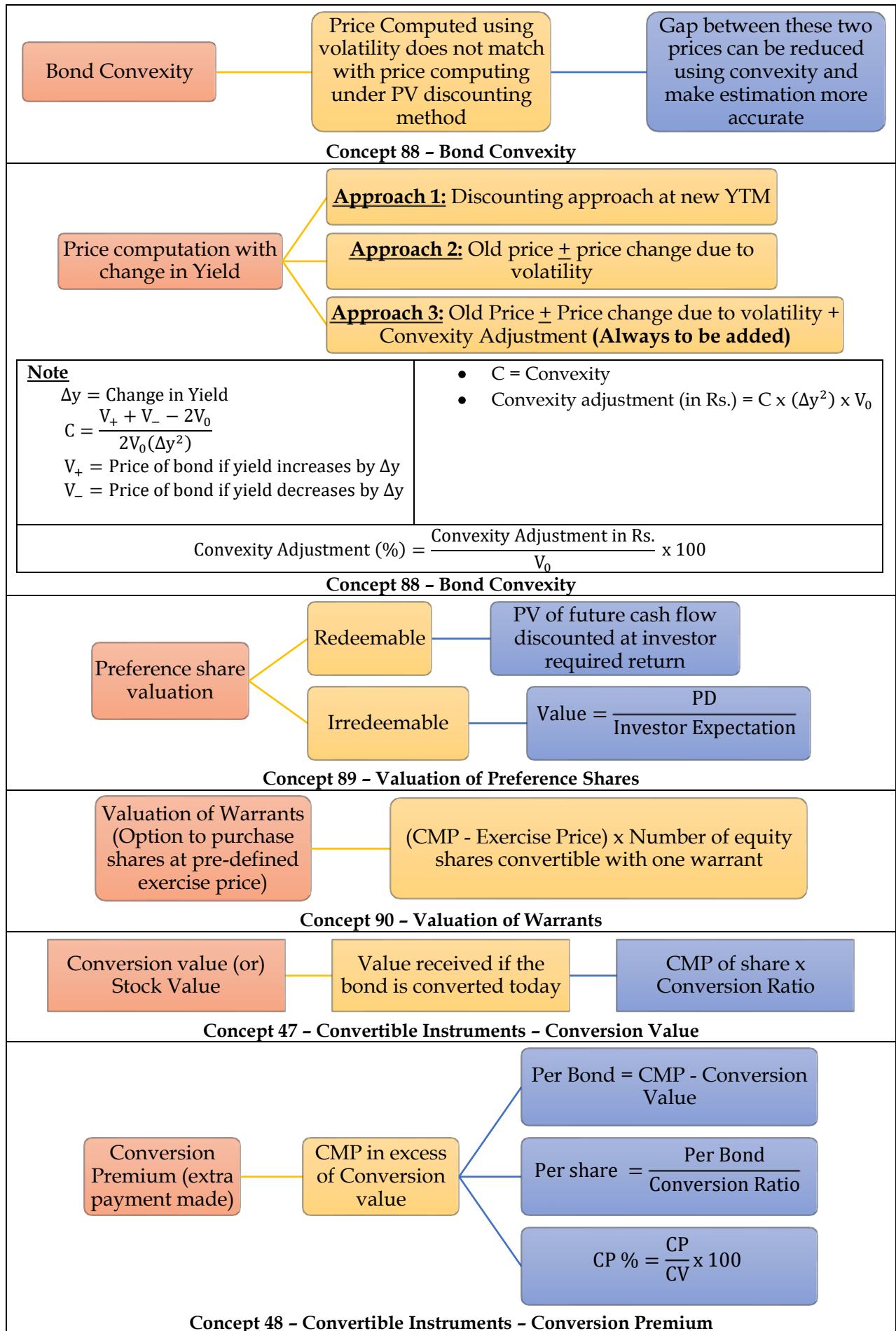
**Note:**

$$\text{Annual cash flow of Annuity Bond} = \frac{\text{CMP}}{\text{PVAF}(r, n)}$$

Concept 77 - Duration and Concept 63 - Annuity Bond**Concept 79 and 82 - Volatility (OR) Modified Duration and Volatility and Change in Price****Concept 80 - Volatility of Half-yearly Bond****Concept 81 - Duration and Churning of Portfolio**

**Concept 78 - Impact of Change in Variables on Duration of Bond****Concept 83 - Immunization****Concept 83 - Immunization****Concept 84 - Bond Refunding [Same as Concept 20 - Replacement Decision]****Concept 84 - Bond Refunding**

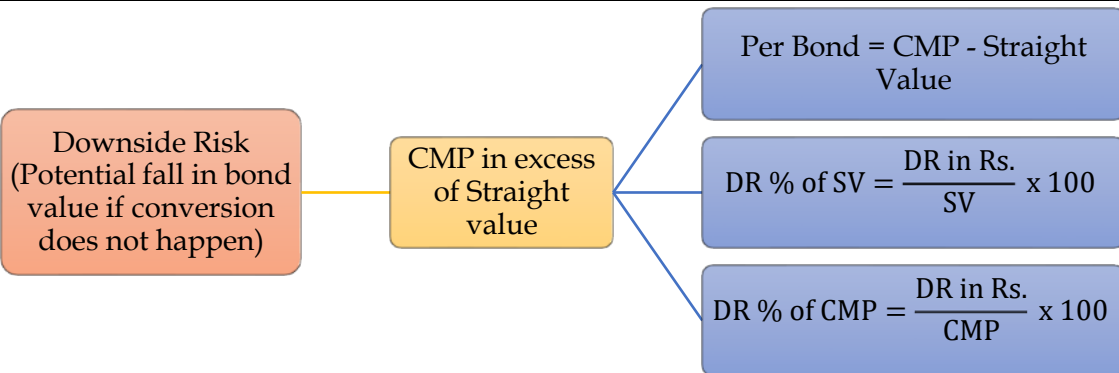




Straight Value (or) Intrinsic value (or) Floor value (or) Minimum Price

PV of future cash flows of bond **without conversion option** discounted at investor required return

Concept 49 and 55 - Straight value (or) Intrinsic value (or) Floor Value (or) Minimum Price

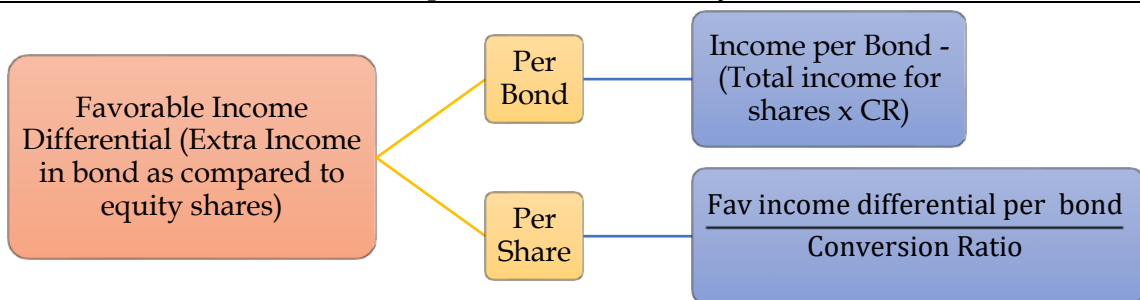


Concept 50 - Downside Risk

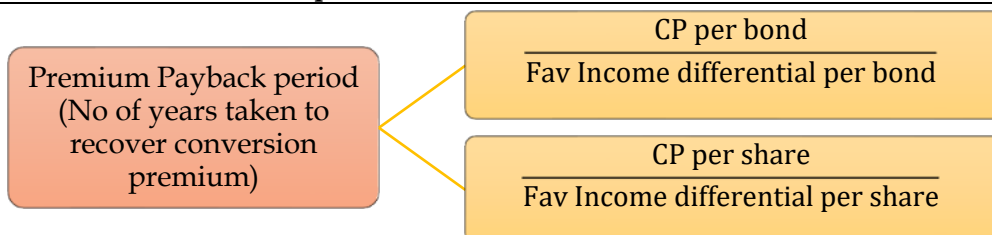
Conversion Parity Price (OR) Market Conversion Price (OR) Minimum Price for conversion (or) Break-even Price

CMP of Convertible Instrument
Conversion Ratio

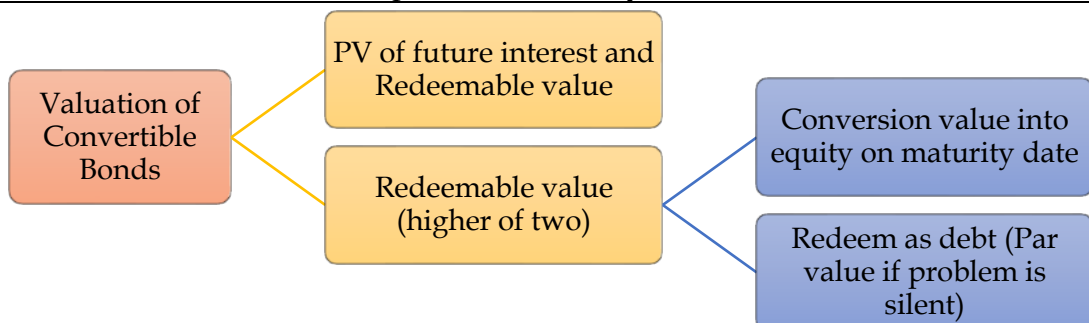
Concept 51 - Conversion Parity Price



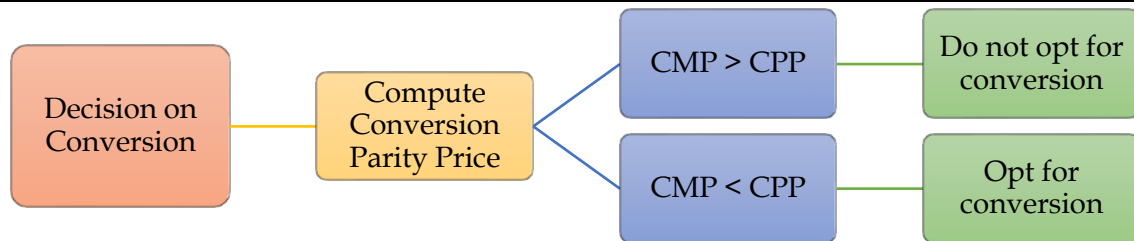
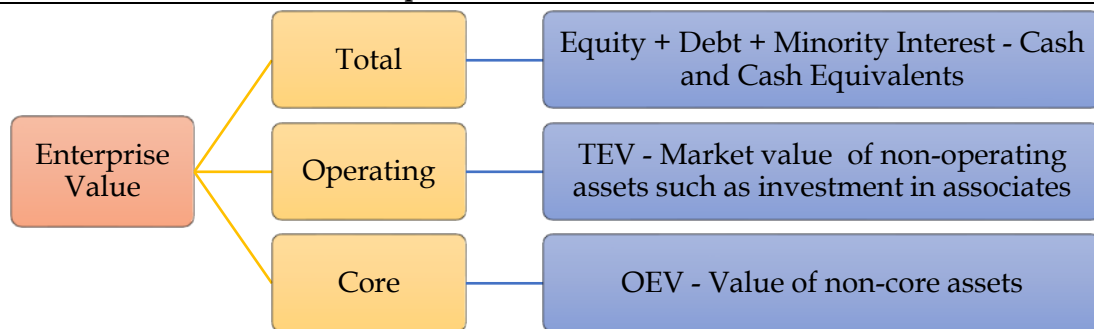
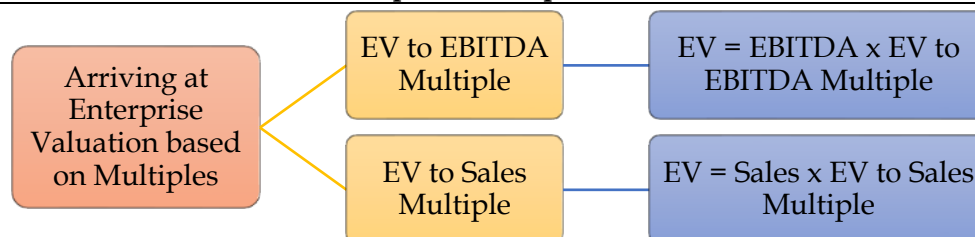
Concept 52 - Favourable income differential



Concept 53 - Premium Payback Period



Concept 54 - Valuation of Convertible Bond

**Concept 56 - Decision on Conversion****Concept 91 - Enterprise Value****Concept 92 - Valuation based on EV Multiples**

Cash Return on Total Investment $\rightarrow \frac{1}{\text{EV to EBITDA Multiple}}$

Concept 93 - Cash Return on Total Investment

Yield of Treasury Bill $\rightarrow \frac{\text{MV} - \text{IP}}{\text{IP}} \times \frac{365}{\text{No of days}} \times 100$

Note:

- Issue price can also be computed using the above formula

Concept 94 and 95 - Yield of Treasury Bill (or) Discount of Commercial Bill (or) Yield of Certificate of Deposit (or) Yield of commercial Paper

Higher frequency of compounding will increase the effective interest cost

$$\text{ERI} = \left(1 + \frac{r}{n}\right)^n$$

N = No of compounding in a year

Concept 96 - Effective Annual Interest on Money Market Instrument

Particulars	Calculation	Amount (in lacs)
Interest cost	FV - Amount raised	XXX
Cost of placement		XXX
Stamp Duty		XXX
Issuing and other charges		XXX
Rating Charges		XXX
Total cost		XXX
Net amount raised through CP		

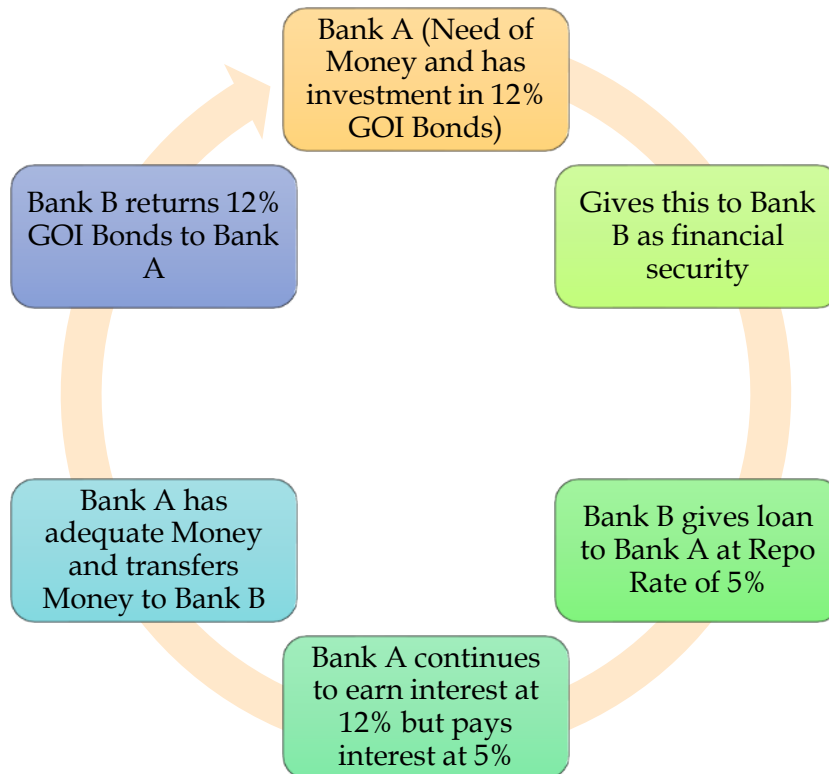
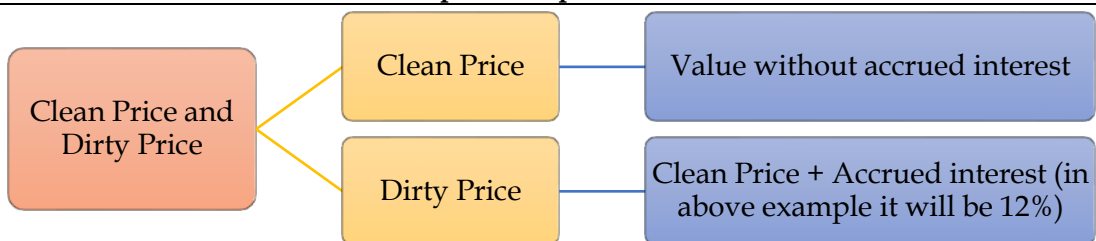
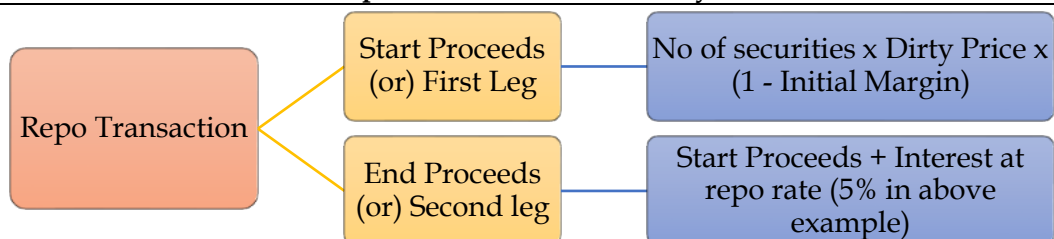
Amount raised		XXX
Less: Line of credit to be maintained		(XXX)
Less: All costs other than interest (note)		(XXX)
Effective amount raised		XXX

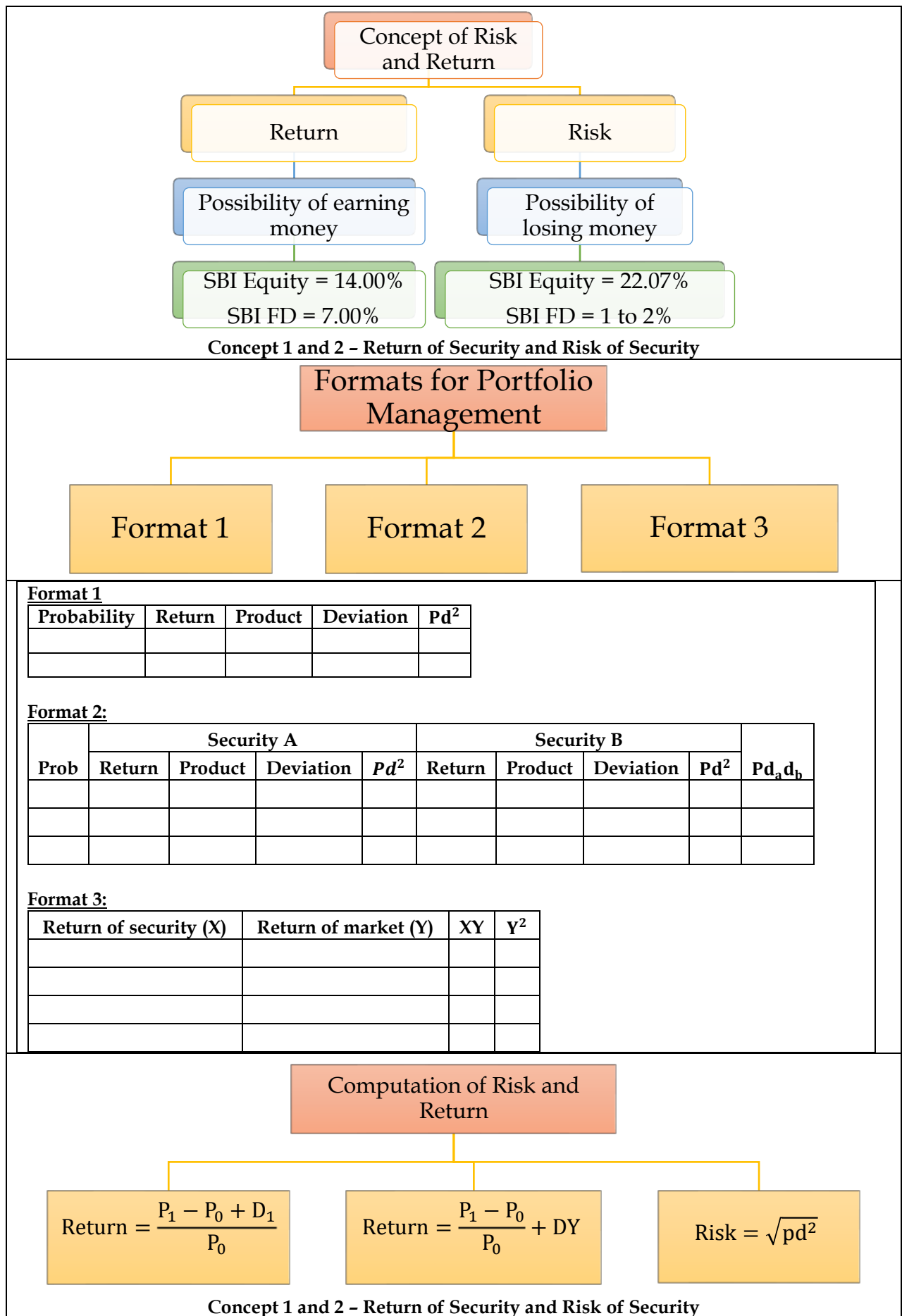
Note:

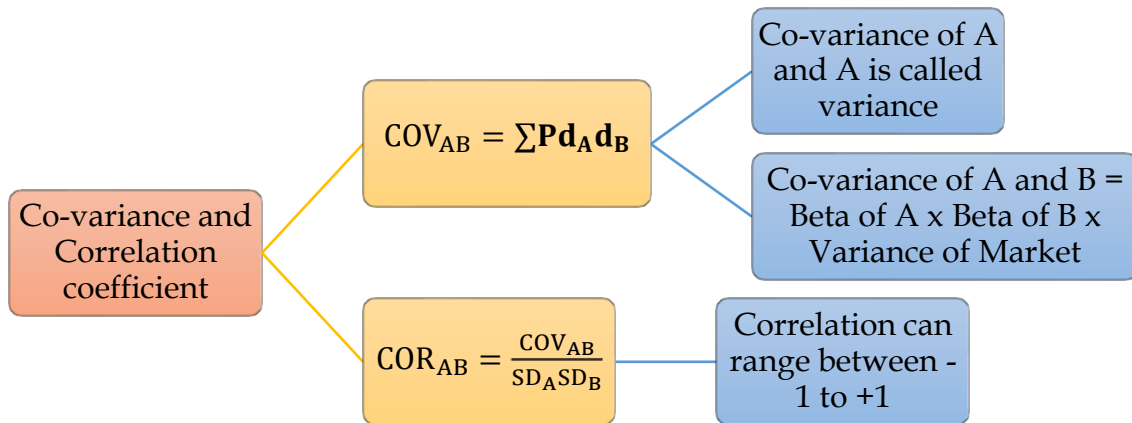
- Interest should also be subtracted in case there is up-front payment of interest

$$\text{Effective cost of CP (pre - tax)} = \frac{\text{Total Cost}}{\text{Effective Amount Raised}} \times \frac{12}{\text{Number of Months}} \times 100 = \text{XX}\%$$

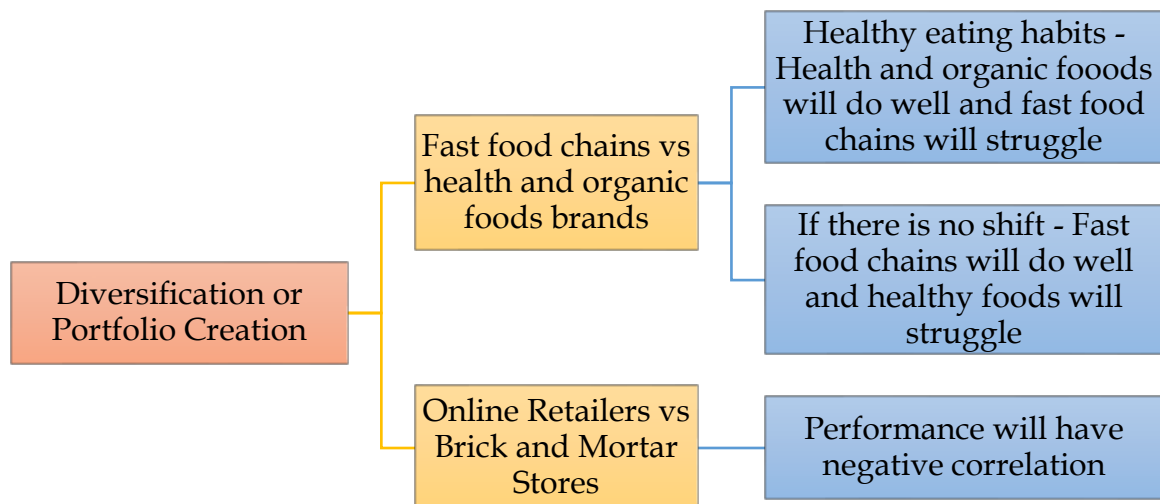
$$\text{Effective cost of CP (post - tax)} = \text{Pre - tax cost of CP} \times (1 - \text{Tax Rate})$$

Concept 97 - Effect of Compensating Balance on Cost of Commercial Paper**Concept 98 - Repo Transaction****Concept 98 - Clean Price and Dirty Price****Concept 98 - Clean Price and Dirty Price**

Chapter 6 - Portfolio Management

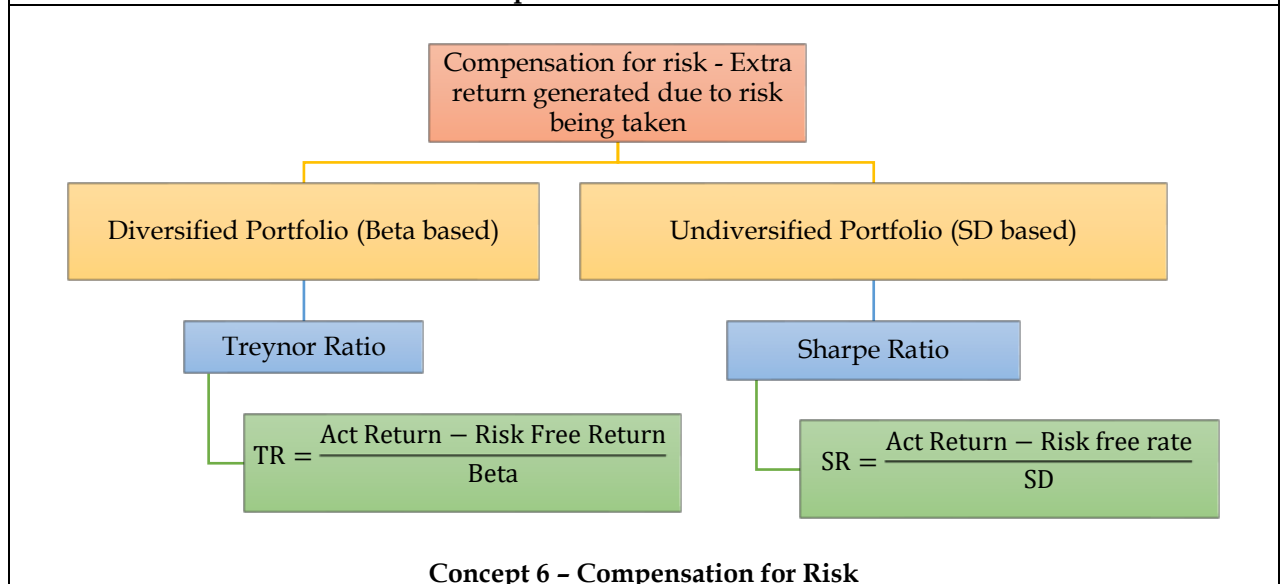
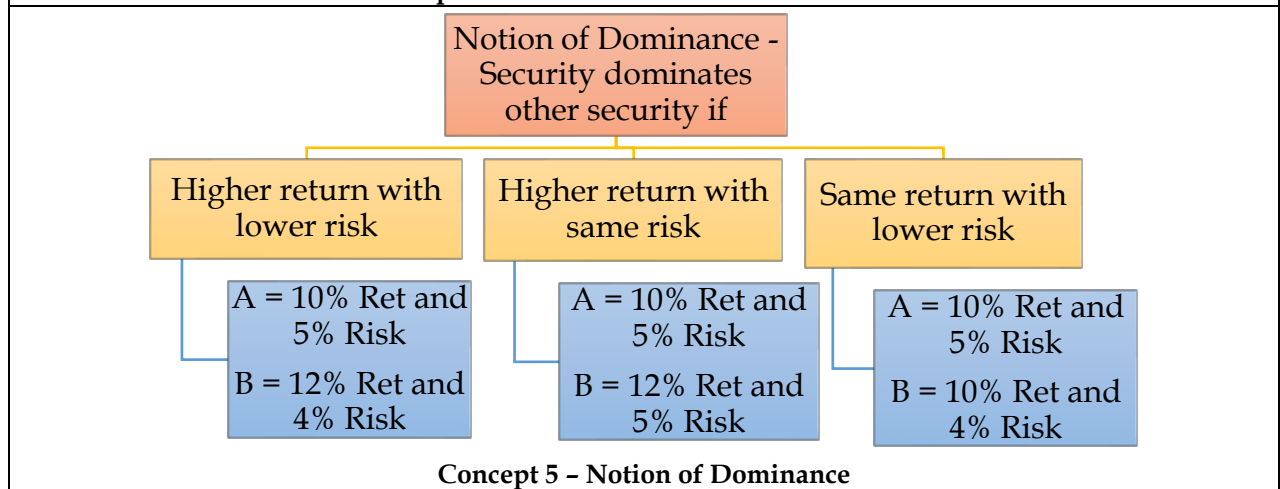
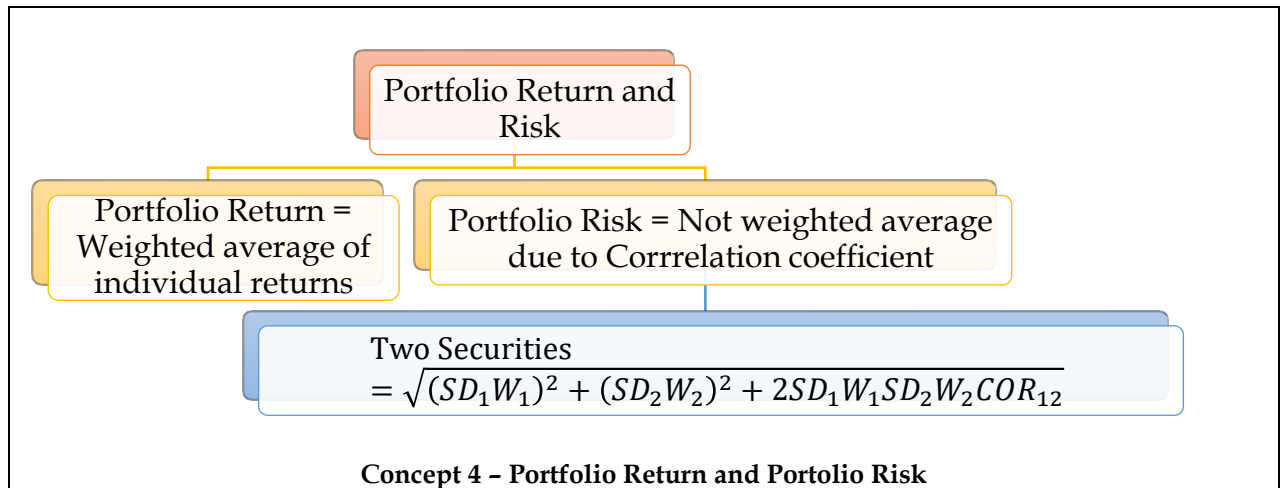


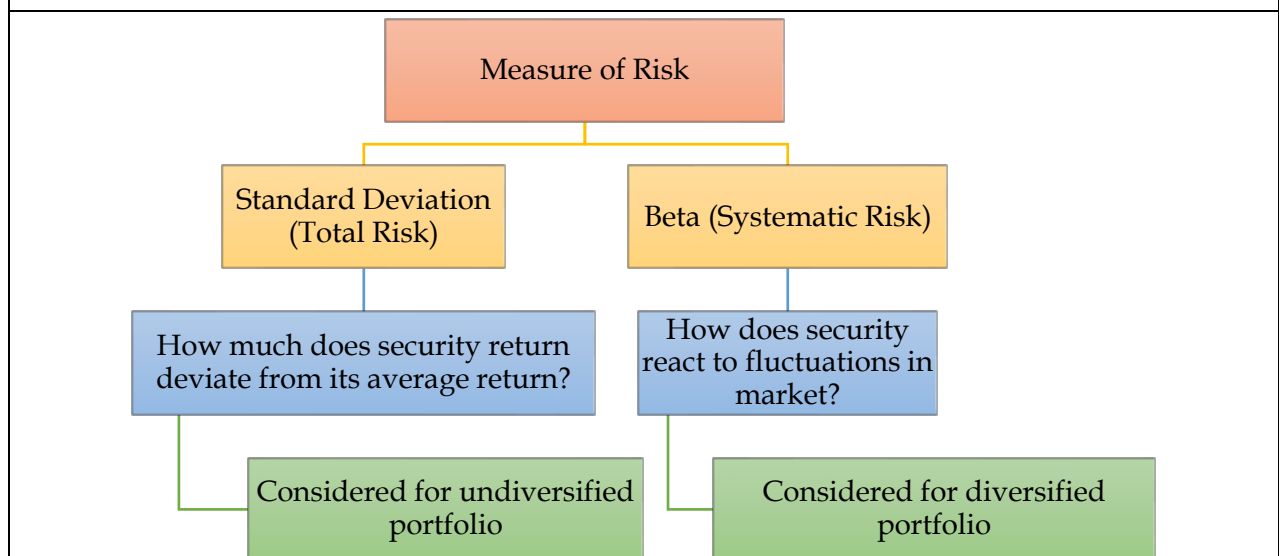
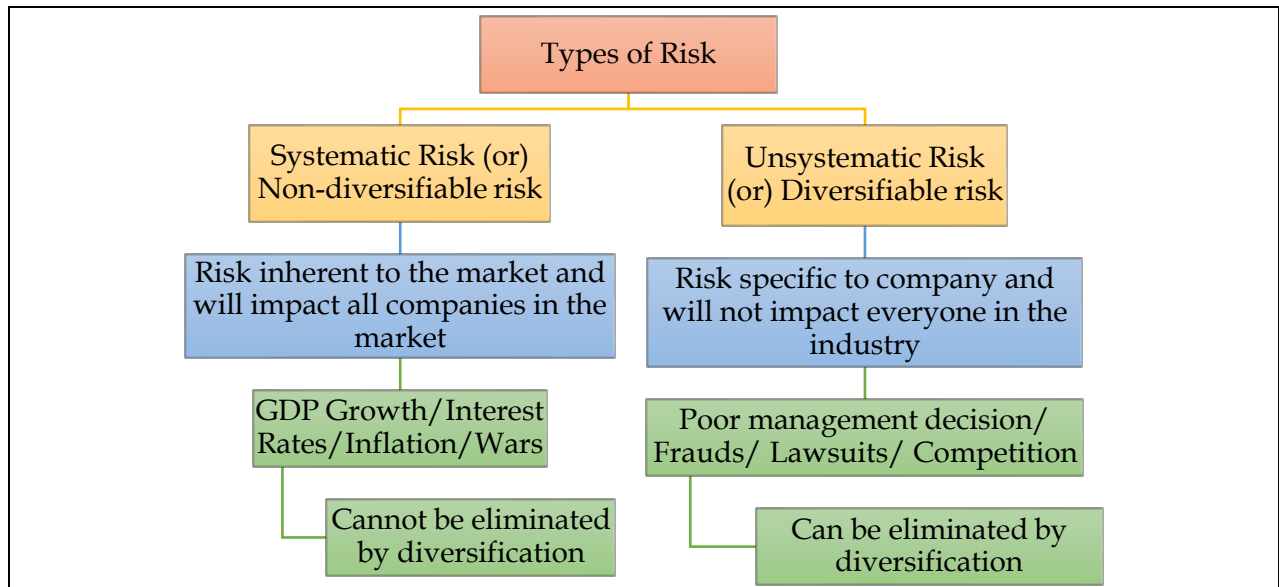
Concept 3 - Computation of Correlation coefficient and Covariance



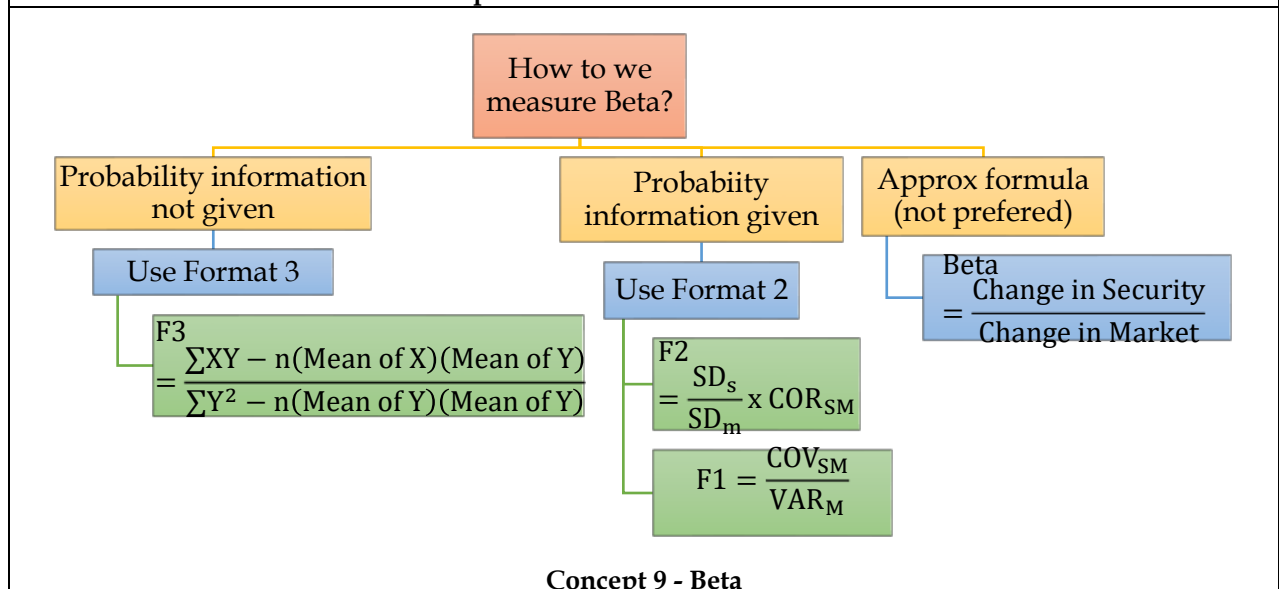
Benefit of Diversification:

Business 1	Business 2	Combined performance
40	-10	15
30	0	15
10	10	10
-10	20	5
-15	40	12.5
Average Return = 11%	Average Return = 12%	Average Return = 11.50%
SD (Risk) = 21.54%	SD (Risk) = 17.20%	SD (Risk) = 3.74%

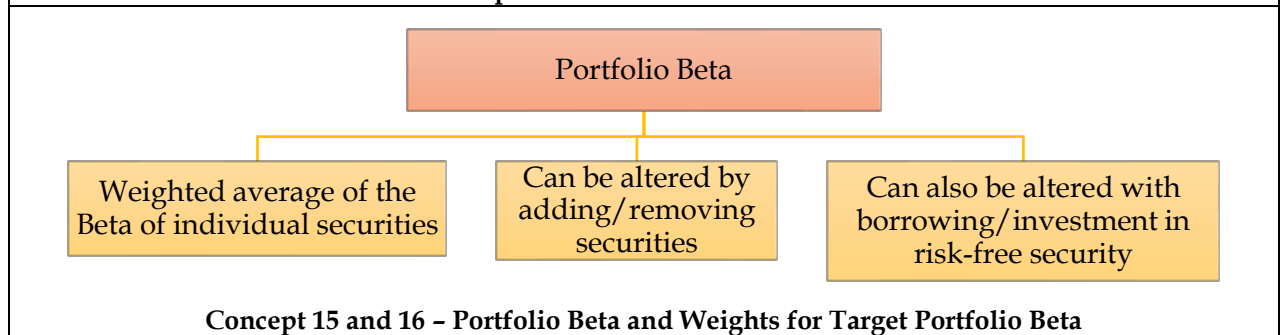
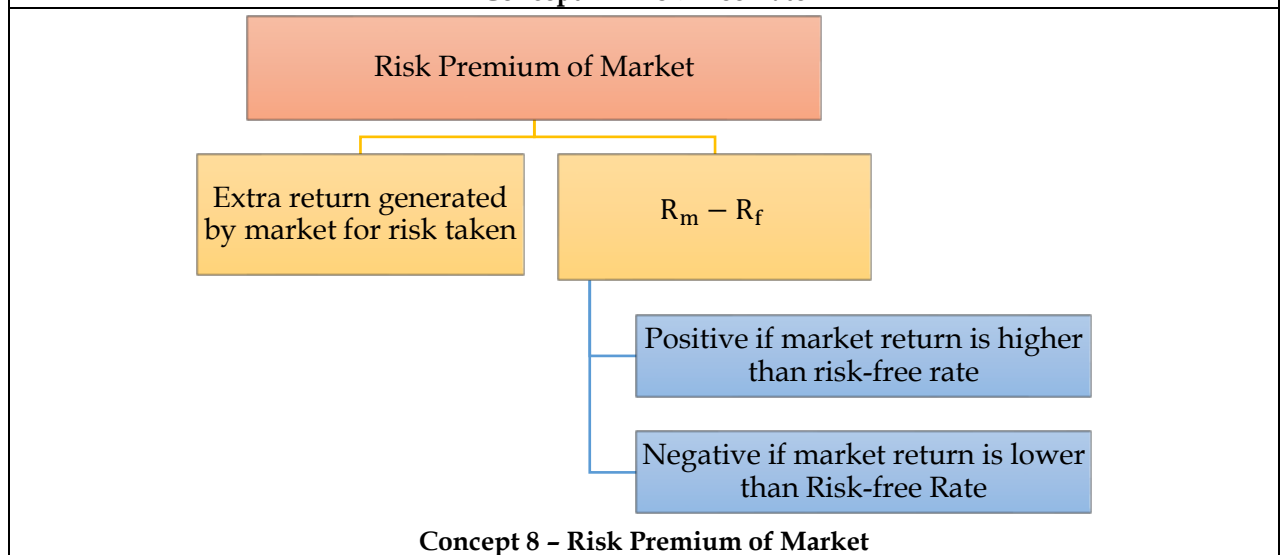
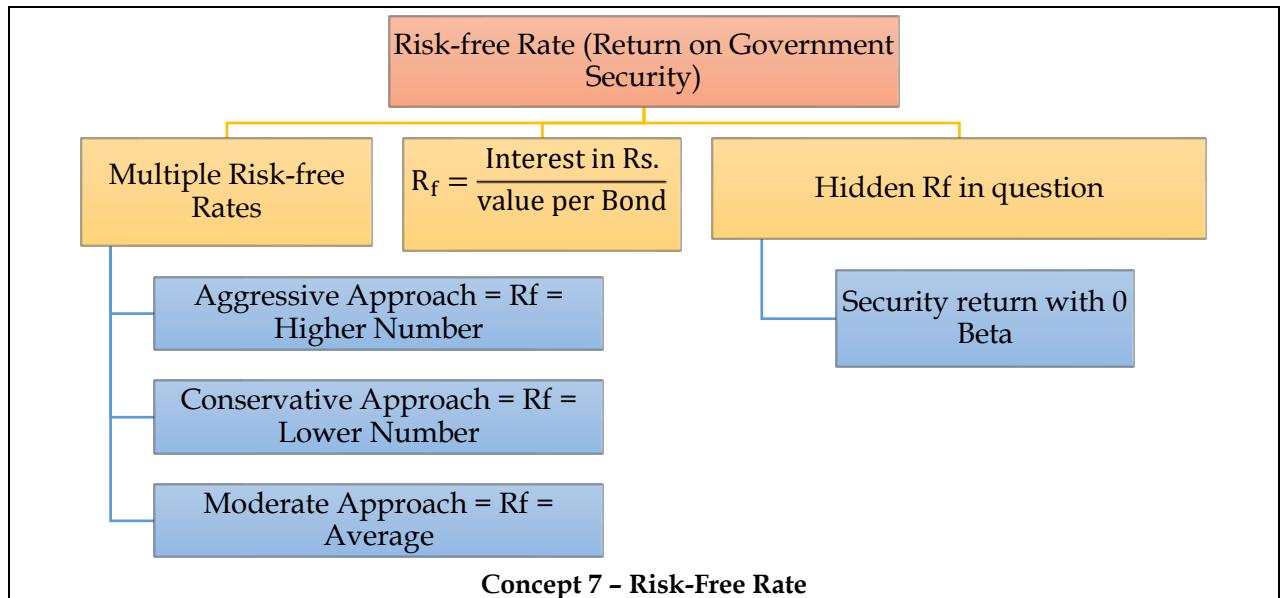




Concept 11 - Beta vs Standard Deviation

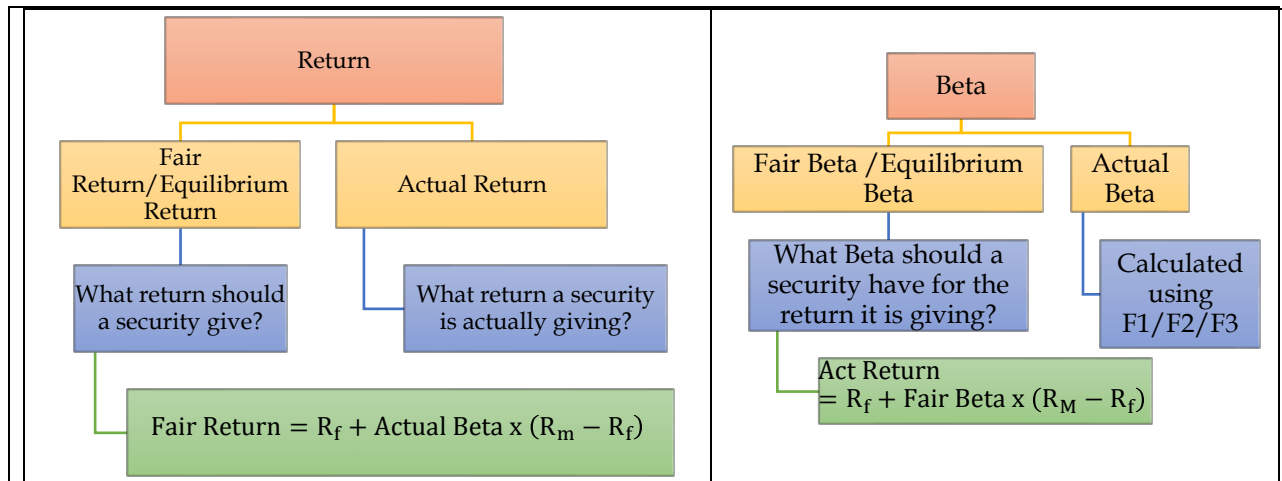
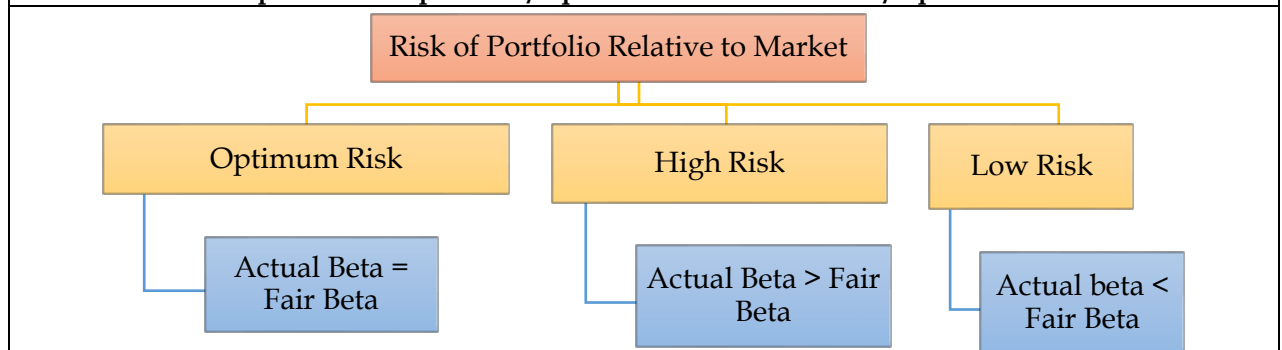
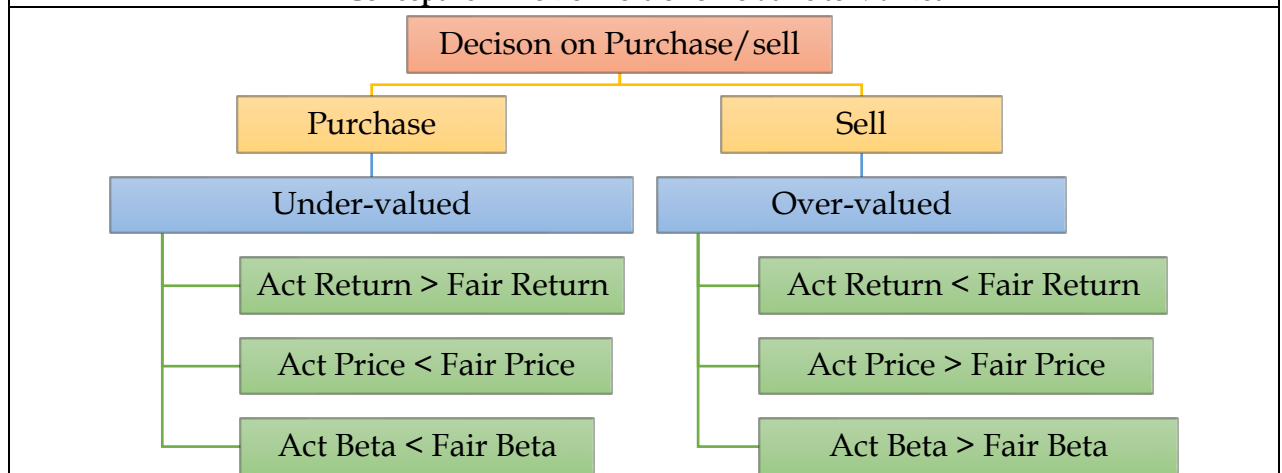
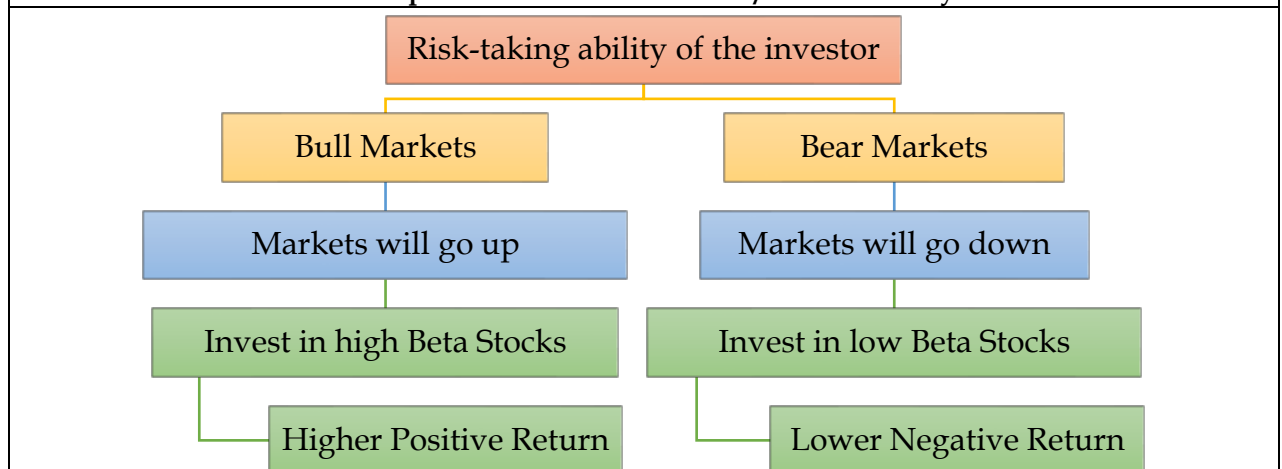


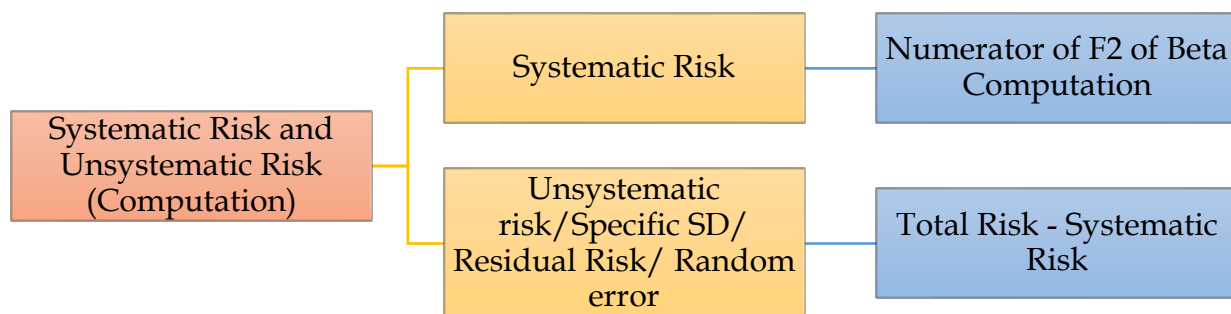
Concept 9 - Beta



Format for computing Portfolio Beta and weights of Portfolio for target Beta

Security	Beta	Weight	Product

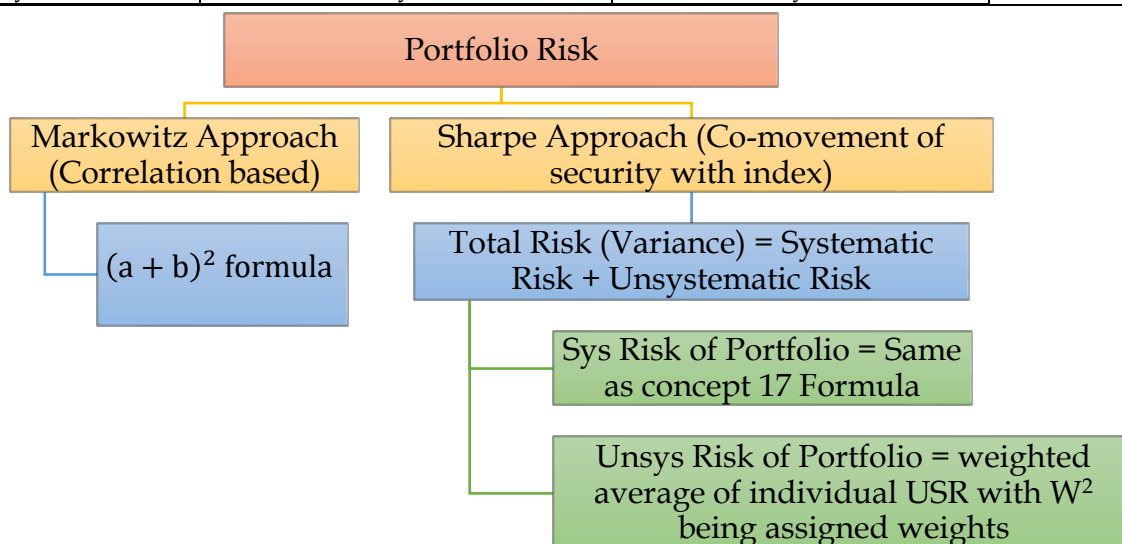
**Concept 12 - Concept of Fair/Equilibrium Return and Fair/Equilibrium Beta****Concept 13 - Risk of Portfolio Relative to Market****Concept 14 - Decision on Purchase/Sale of Security****Concept 10 - Beta (Bullish vs Bearish Market)**



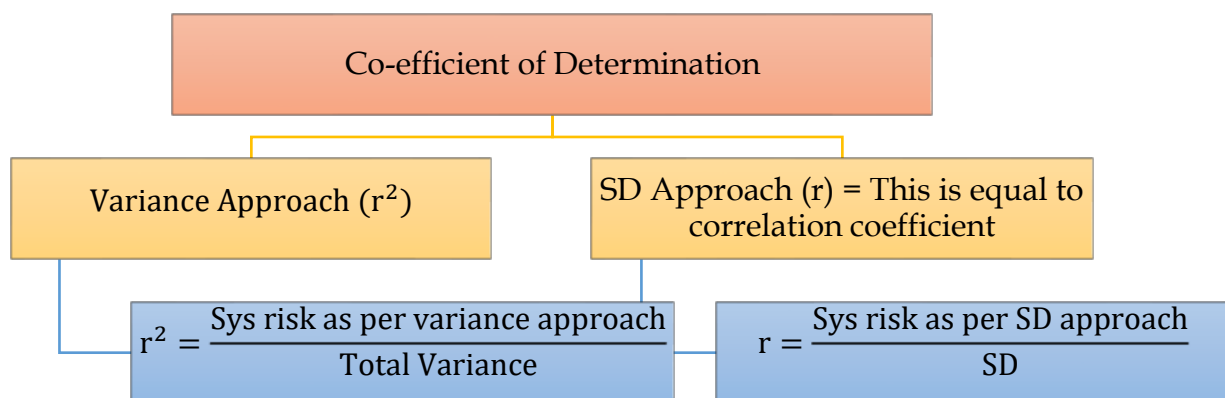
Concept 17 – Systematic Risk and Unsystematic Risk

Formulae

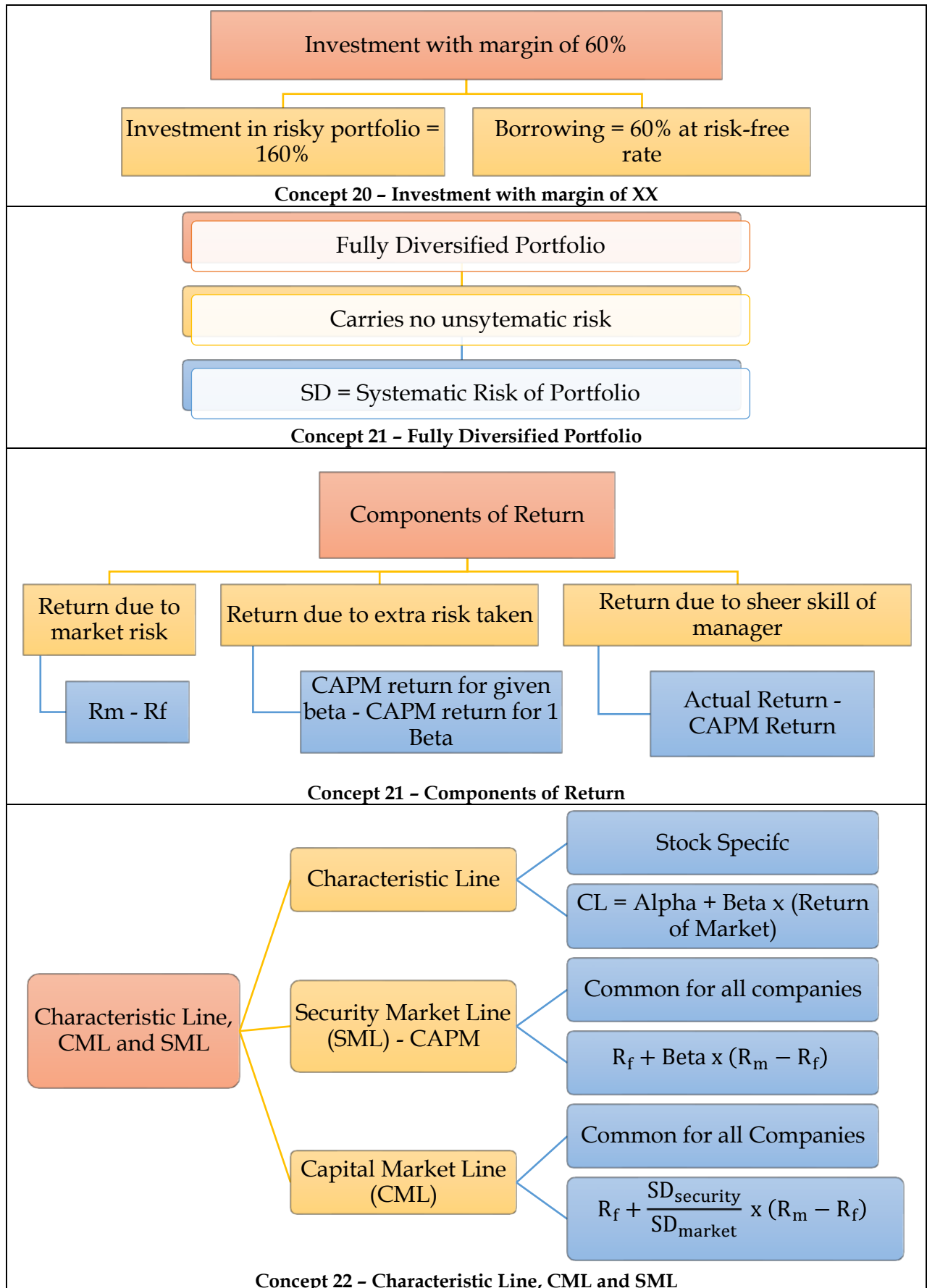
Particulars	Variance Approach	SD Approach
Total Risk	Variance of security	SD of security
	(Beta of security x SD of market) ² (or)	Beta of security x SD of market (or)
Systematic Risk	(SD of security x COR _{sm}) ²	SD of security x COR _{sm}
Unsystematic Risk	Total risk - Systematic risk	Total risk - Systematic risk

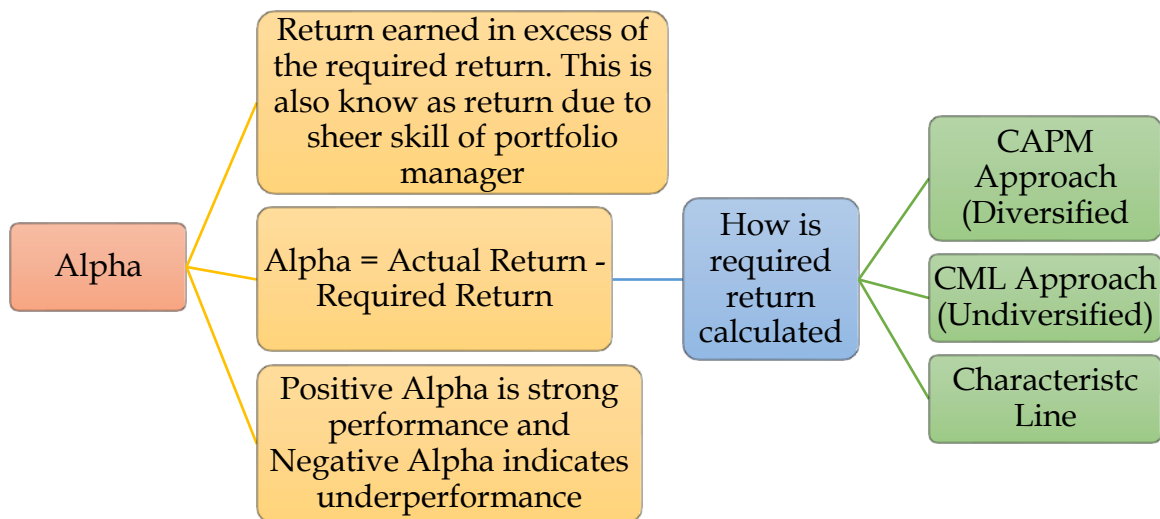


Concept 18 – Portfolio Risk through Markowitz/Sharpe Approach

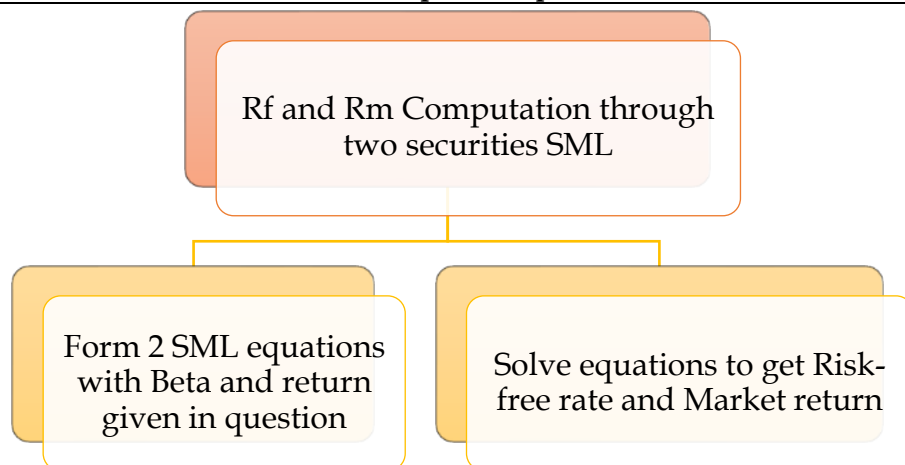


Concept 19 – Co-efficient of Determination

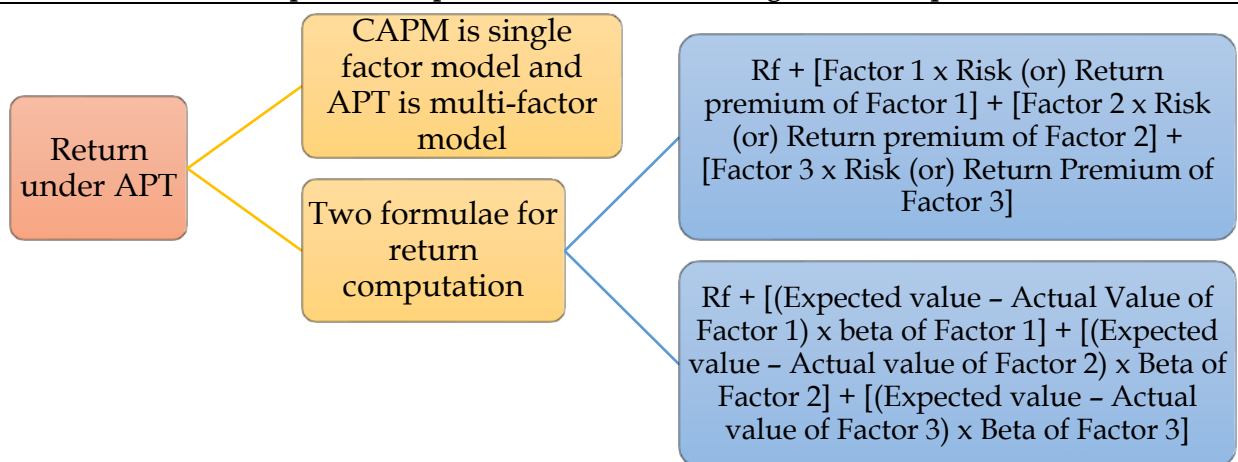




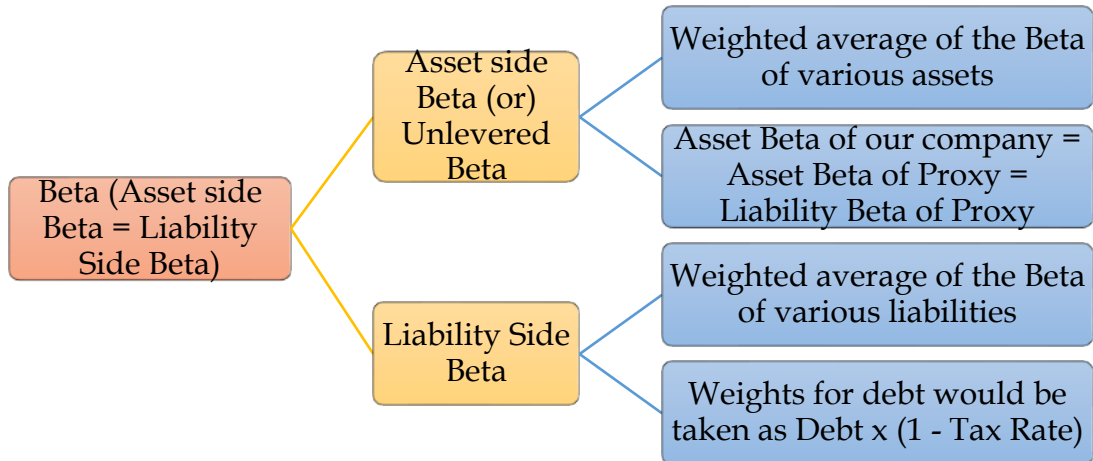
Concept 23 - Alpha



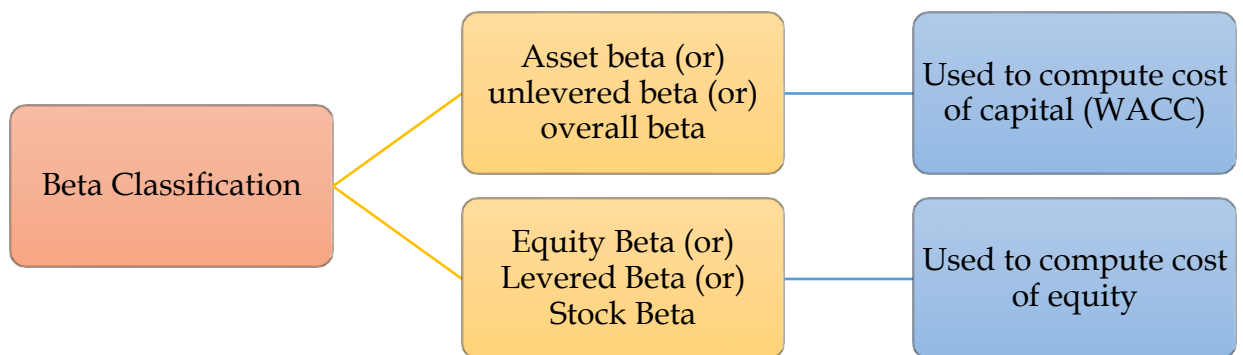
Concept 24 - Computation of Rm and Rf using two SML Equations



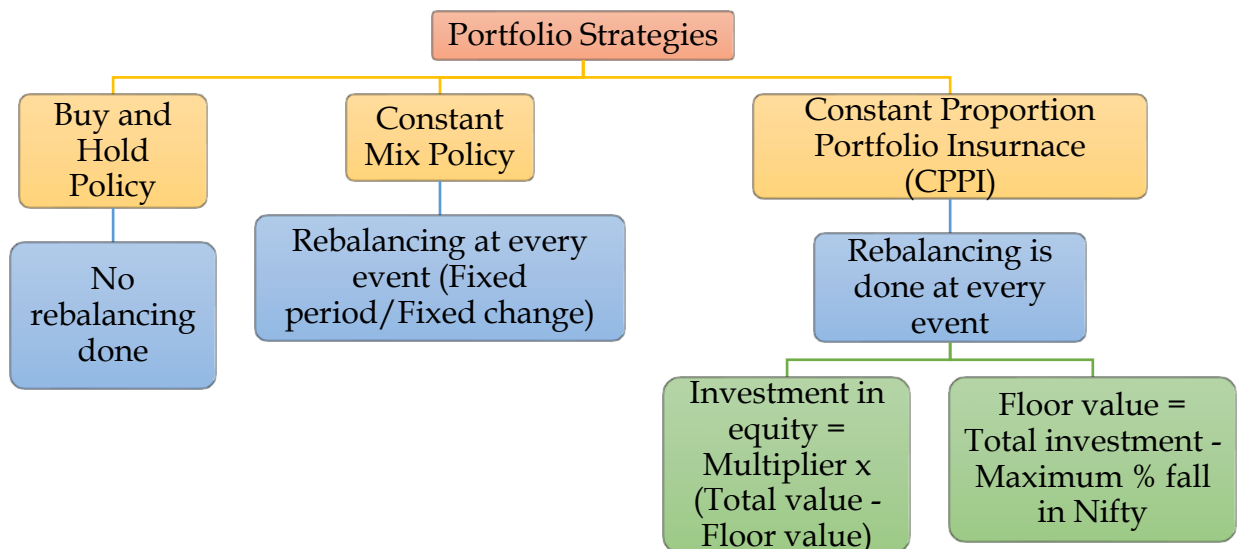
Concept 25 - Arbitrage Pricing Theory



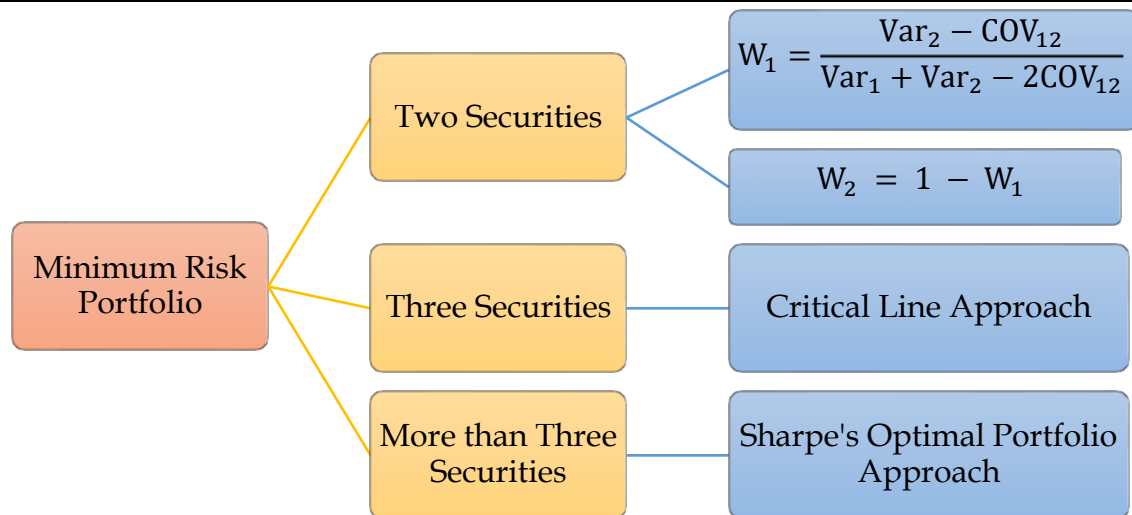
Concept 26 - Beta and Leverages



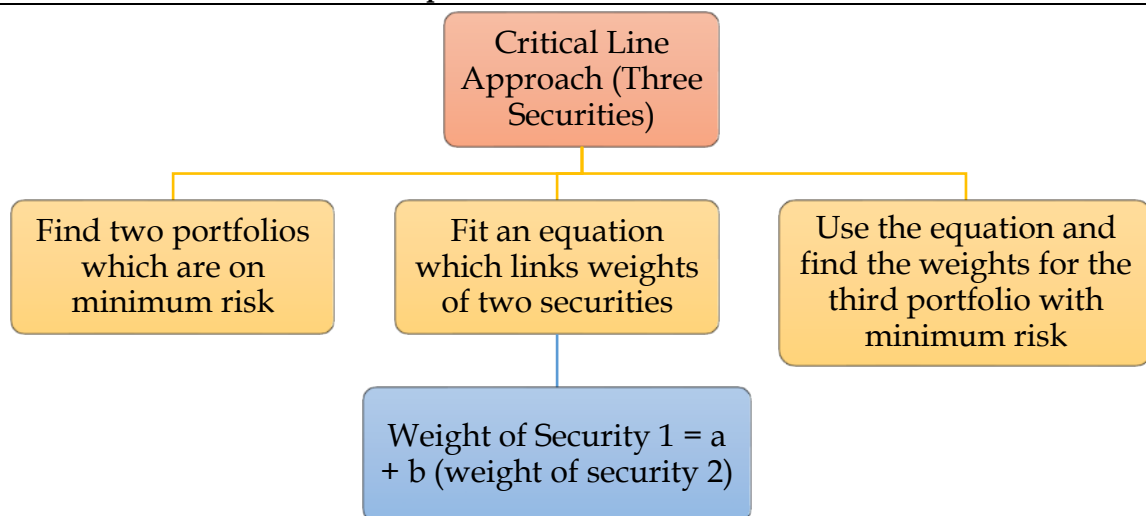
Concept 26 - Beta and Leverages



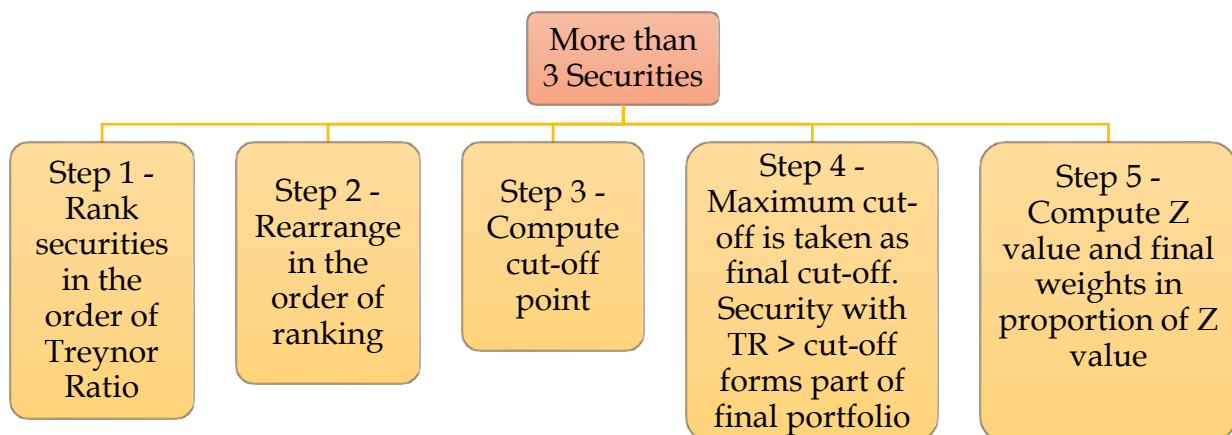
Concept 27 - Portfolio Strategies



Concept 28 - Minimum Risk Portfolio



Concept 28 - Critical Line Approach



Concept 28 - More than 3 Securities

Format for Computation of Cut-off Point:

Sec	TR	Beta	USR	SR	$\frac{SR}{USR}$	$TR \times \left(\frac{SR}{USR}\right)$	$\Sigma TR \times \left(\frac{SR}{USR}\right)$	$\Sigma \left(\frac{SR}{USR}\right)$	$1 + \Sigma \left(\frac{SR}{USR}\right)$	Cur-off

Note:

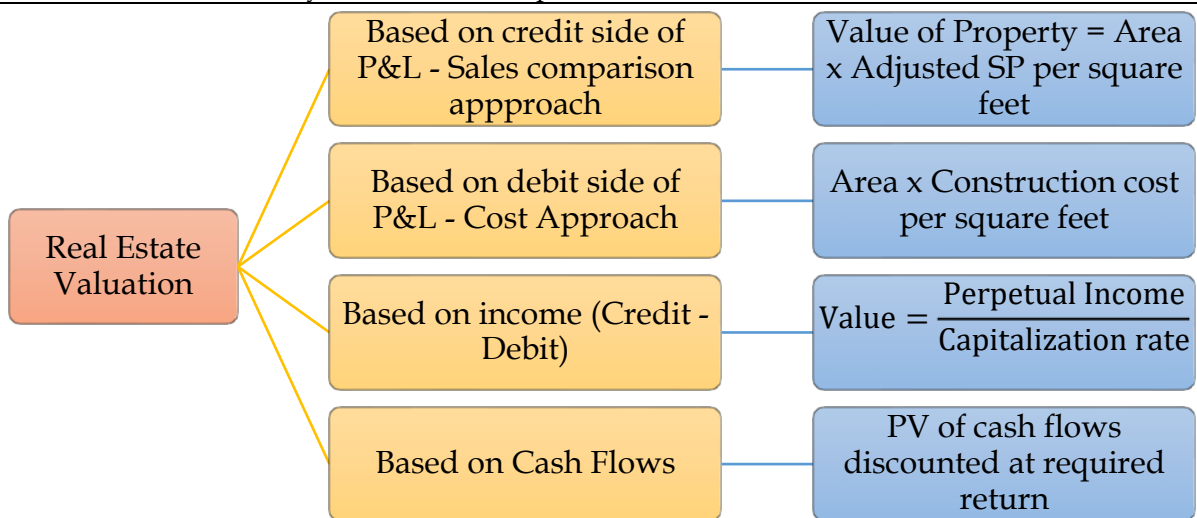
- TR = Treynor Ratio
- USR = Unsystematic Risk

- $SR = \text{Systematic Risk} = \text{Beta} \times \text{Beta} \times \text{Variance of Market}$
- **Cut-off Point** = Column 8 / Column 10

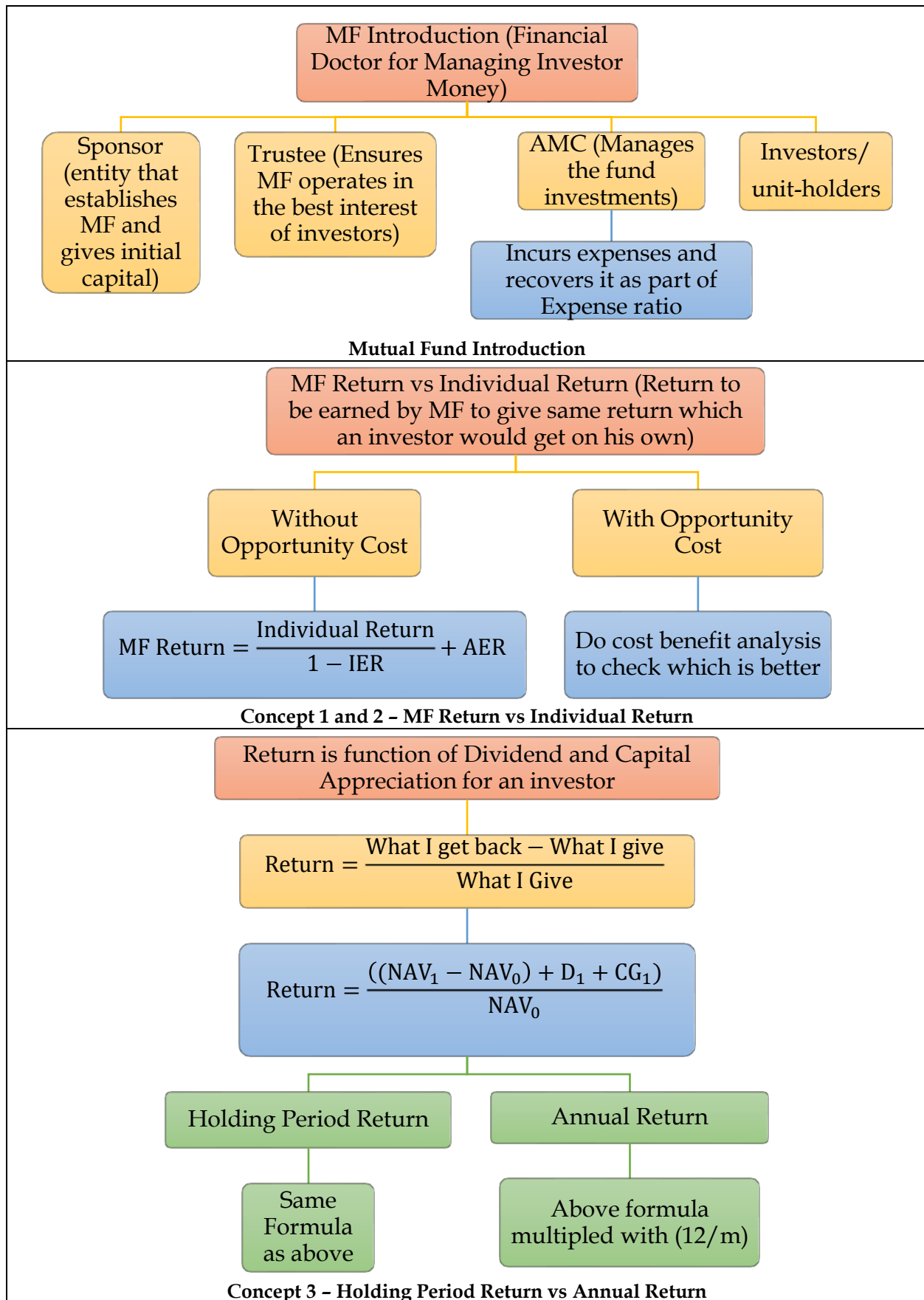
Z- value computation

$$Z \text{ value} = \text{Excess cutoff} \times \left(\frac{\text{Beta}}{\text{USR}} \right)$$

- $\text{Excess cutoff} = \text{Treynor Ratio} - \text{Cutoff point}$

**Concep 29 – Real Estate Valuation**

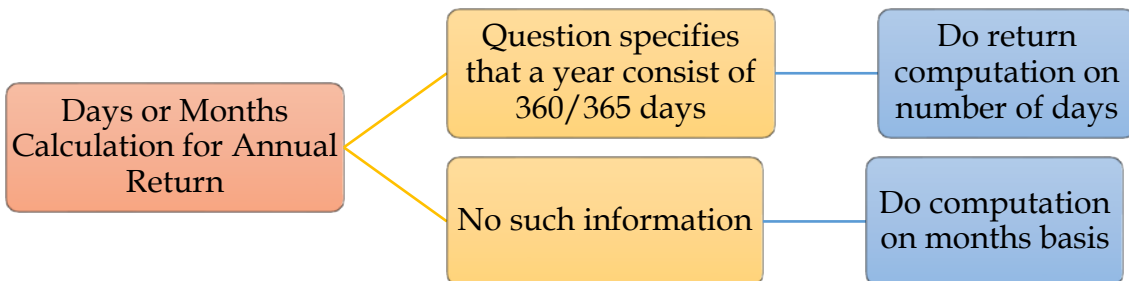
Chapter 8 – Mutual Funds



Period of Holding through Holding period
Return and Annual Return

$$\text{Period of Holding} = \frac{\text{HPR}}{\text{Annual Return}} \times 365 \text{ days (or) 12 Months}$$

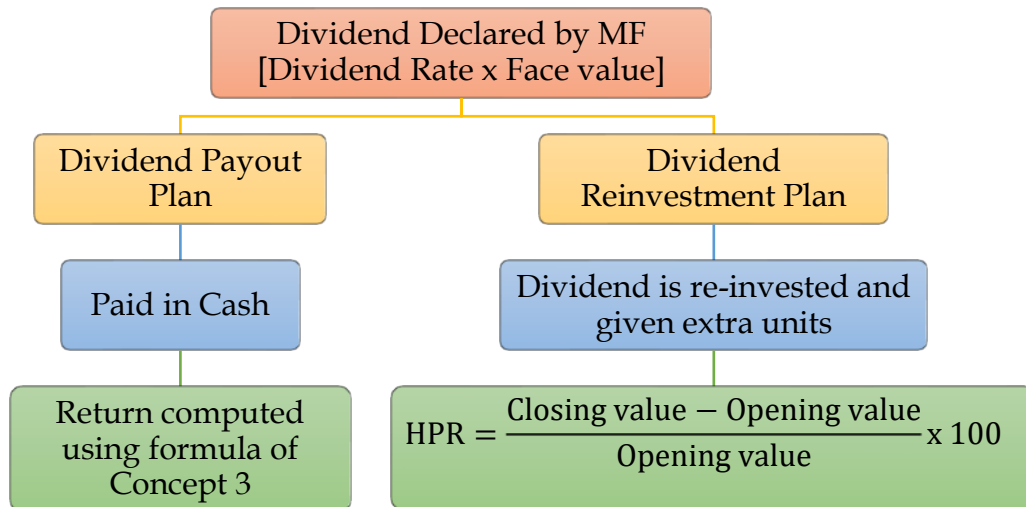
Concept 7 - Period of Holding



Concept 5 - Return Computation - Days vs Months

Note:

- Number of days = Redemption date - Investment date [Consider date of redemption in days calculation and ignore date of investment in computation]



Concept 8 - Dividend Payout Plan and Dividend Re-investment Plan

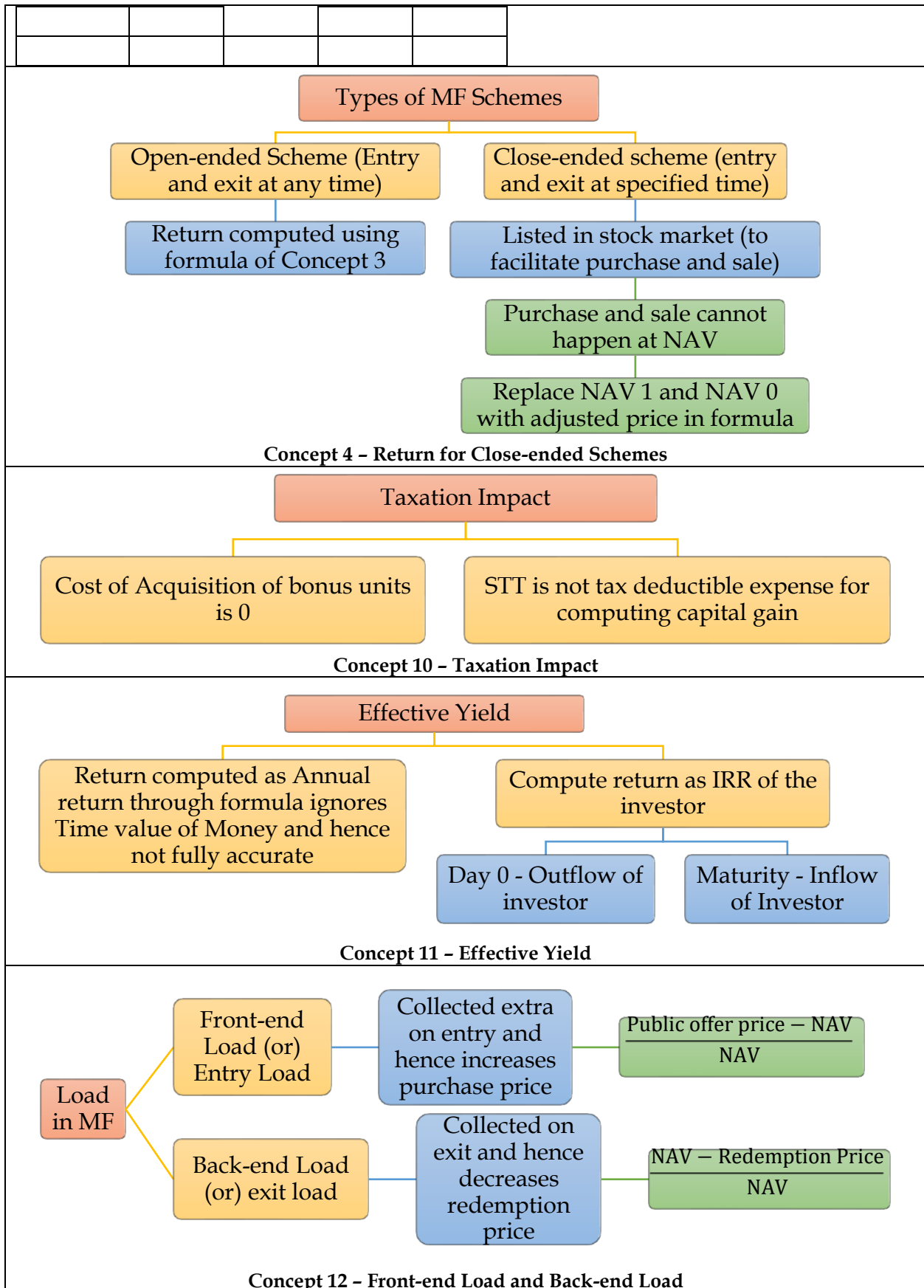
Concept 9 - Computation of Closing Units

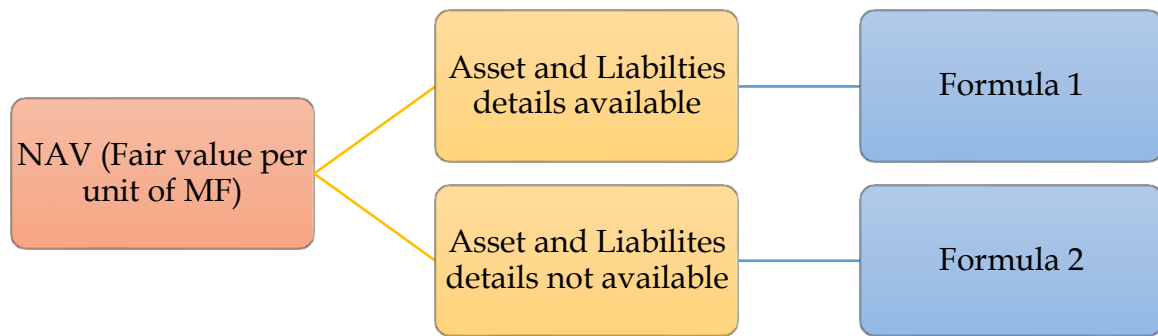
Dividend Reinvestment Plan:

Date	Unit held (A)	Dividend		Reinvestment NAV (C)	New units (D= B/C)	Total units (A+ D)
		%	Amount (B) (A x Face value x Dividend %)			

Bonus Plan:

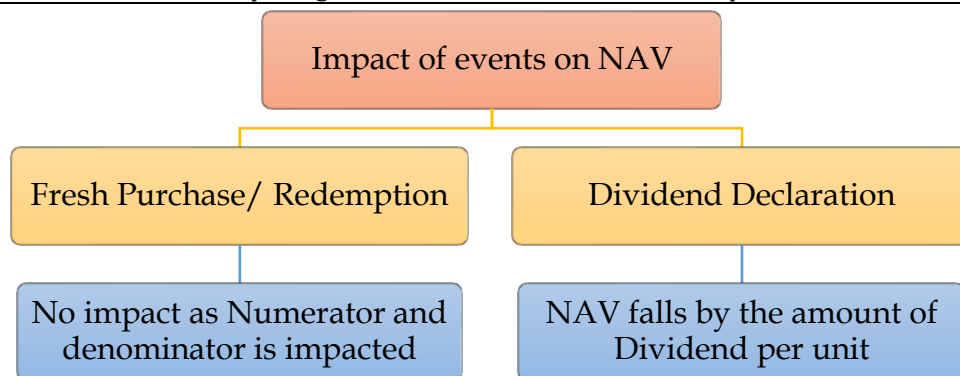
Date	Unit held (A)	Bonus ratio	Bonus units (B = A x Bonus Ratio)	Total units (A + B)



**Concept 14 and 15 - NAV**

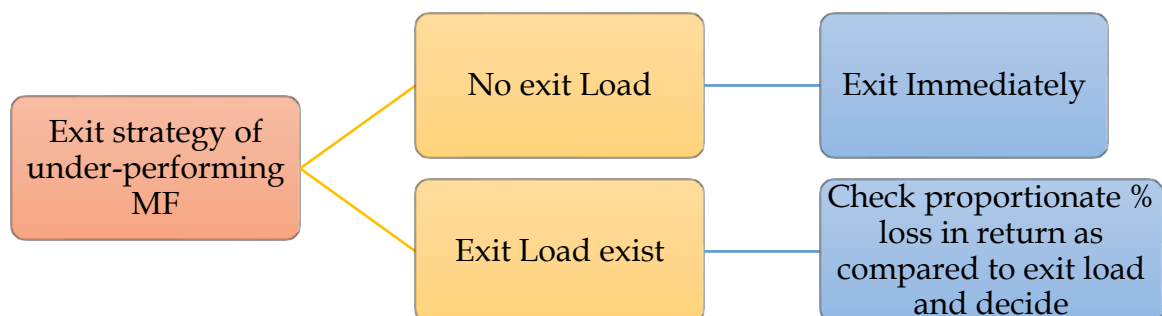
$$\text{Formula 1 NAV} = \frac{\text{Market value of assets} - \text{Value of liabilities}}{\text{Number of units}}$$

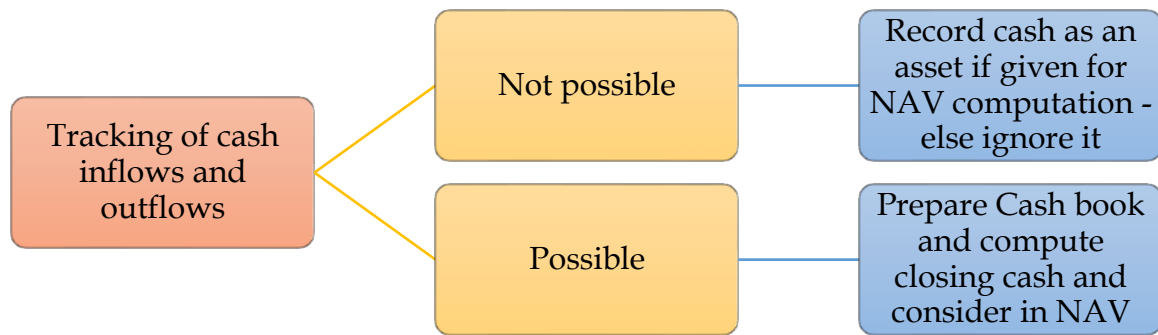
$$\text{Formula 2 NAV} = \frac{\text{Opening Networth} + \text{Items increasing network} - \text{Items reducing network}}{\text{Opening units} + \text{New units issued} - \text{Redemptions}}$$

**Concept 16 and 17**

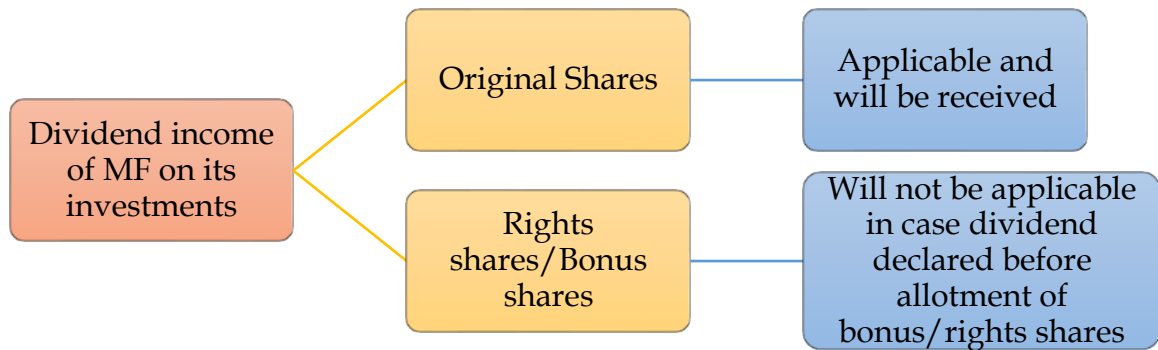
Total yield of Investor (Applicable when an investor is investing in multiple MF)

$$\frac{\text{Capital Gain of All MF} + \text{Dividend of All MF}}{\text{Amount invested in all MF}} \times 100$$

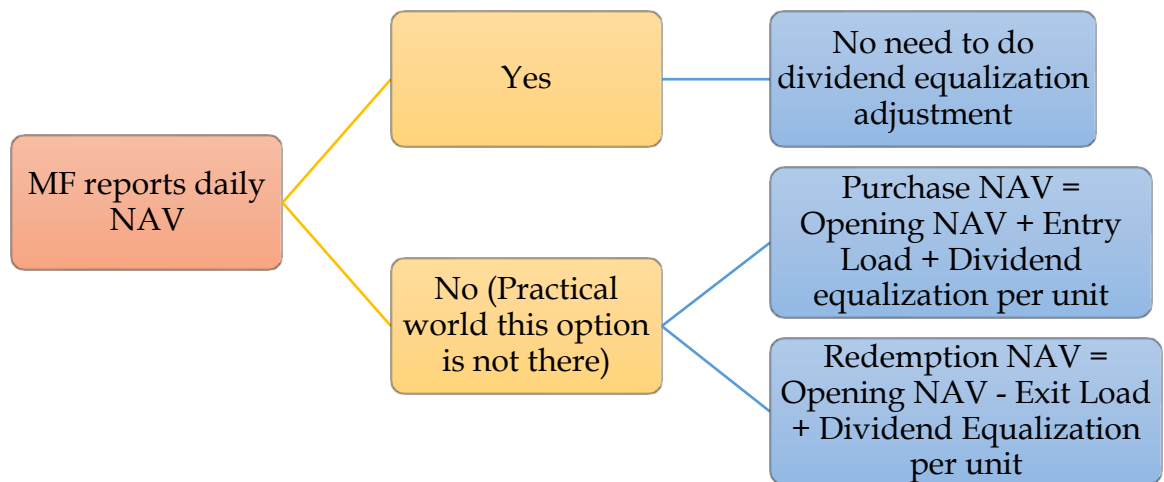
Concept 6 - Total Yield of Investor**Concept 13 - Exit Load vs Lower Return from MF**



Concept 18 - Cash Balance Computation to Value NAV



Concept 21 - Dividend Income on Equity Shares



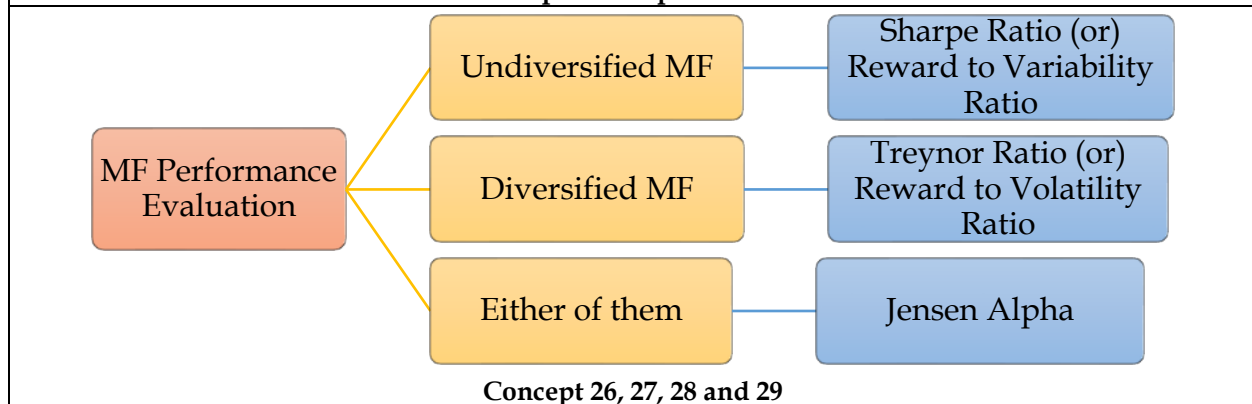
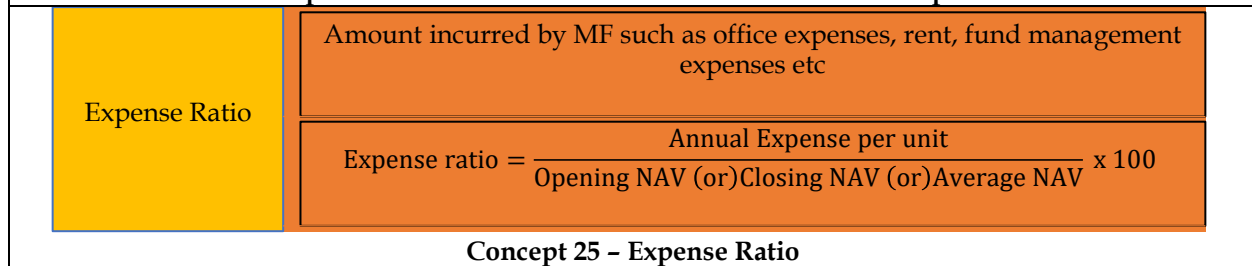
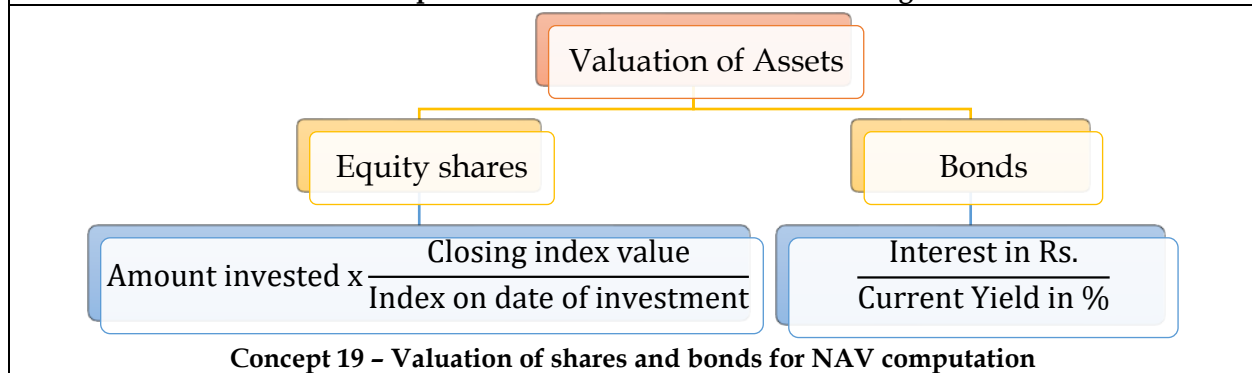
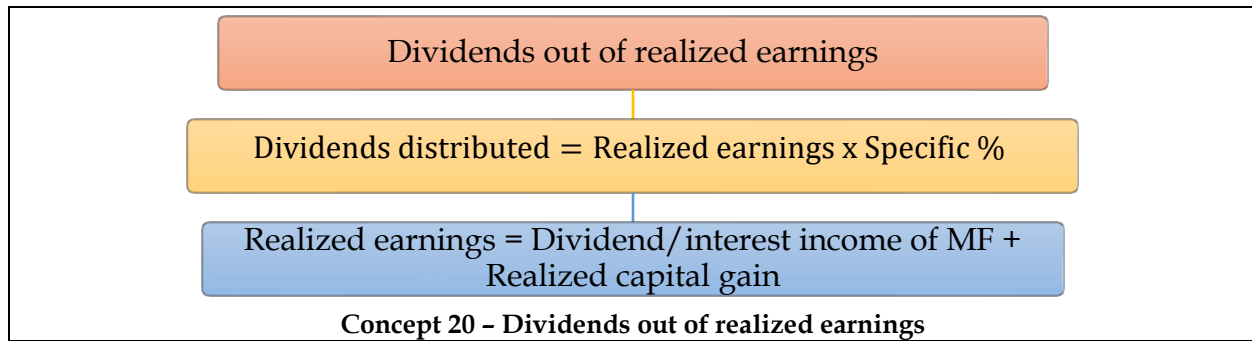
Concept 21 - Impact of Dividend Equalization

Note:

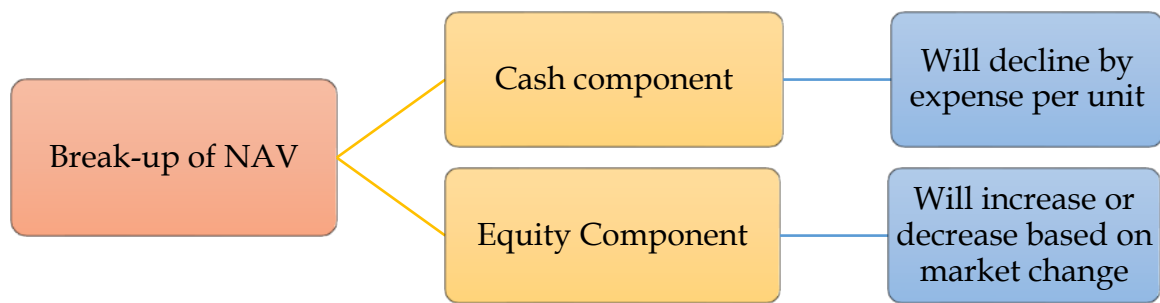
$$\text{Dividend equalization per unit} = \frac{\text{Total income earned}}{\text{Number of units}}$$

Income Available for distribution is computed to identify the amount of dividends which can be distributed	Let us assume there are three months in the calculation period
	$\text{Income per unit} = \frac{\text{Total income}}{\text{Number of units of that month}}$
	$\text{Income available for distribution} = (\text{Month 1 income per unit} + \text{Month 2 income per unit} + \text{Month 3 income per unit}) \times \text{Closing units}$

Concept 24 - Income Available for Distribution

**Formulae**

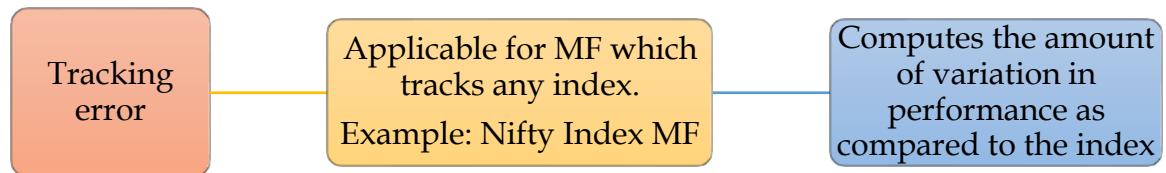
Sharpe Ratio = $\frac{\text{Expected return} - \text{Risk free}}{\text{Standard Deviation}}$	Higher the better	Values can be negative if MF return is lower than risk-free return
Treynor Ratio = $\frac{\text{Expected return} - \text{Risk free}}{\text{Beta}}$	Higher the better	
Alpha = Actual return – Required return as per CAPM	Higher Positive Alpha is Better	



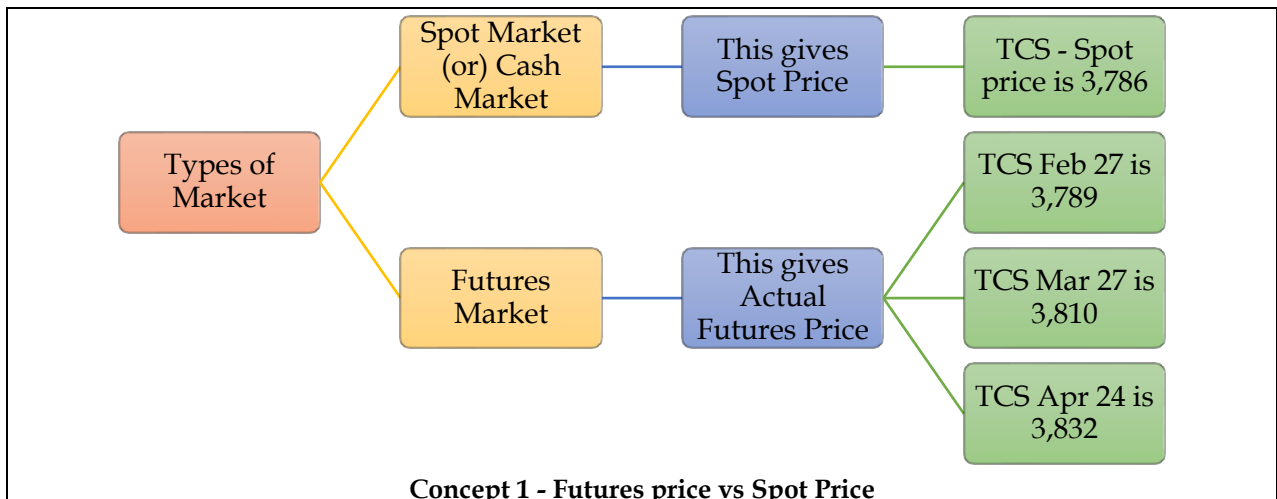
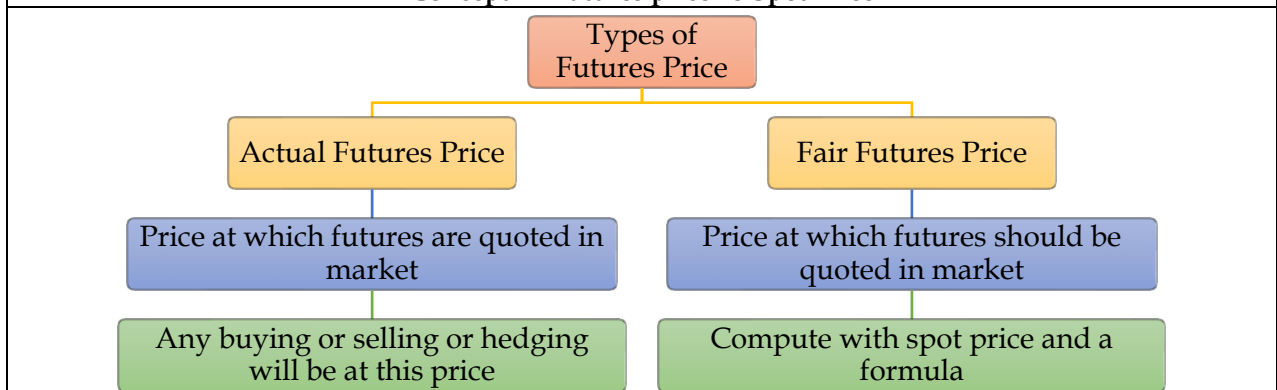
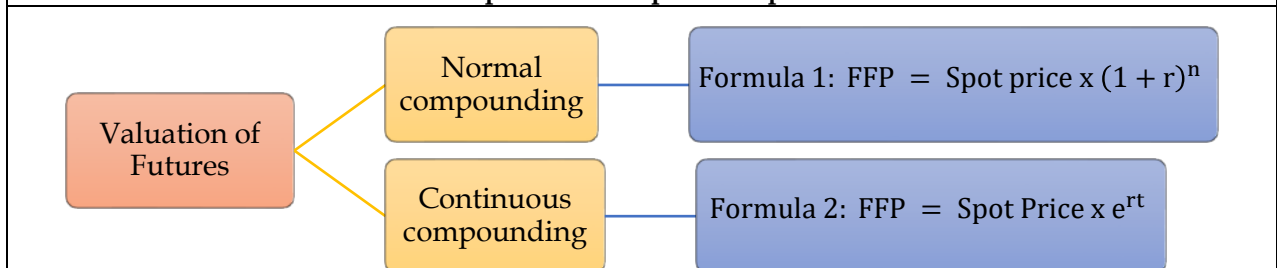
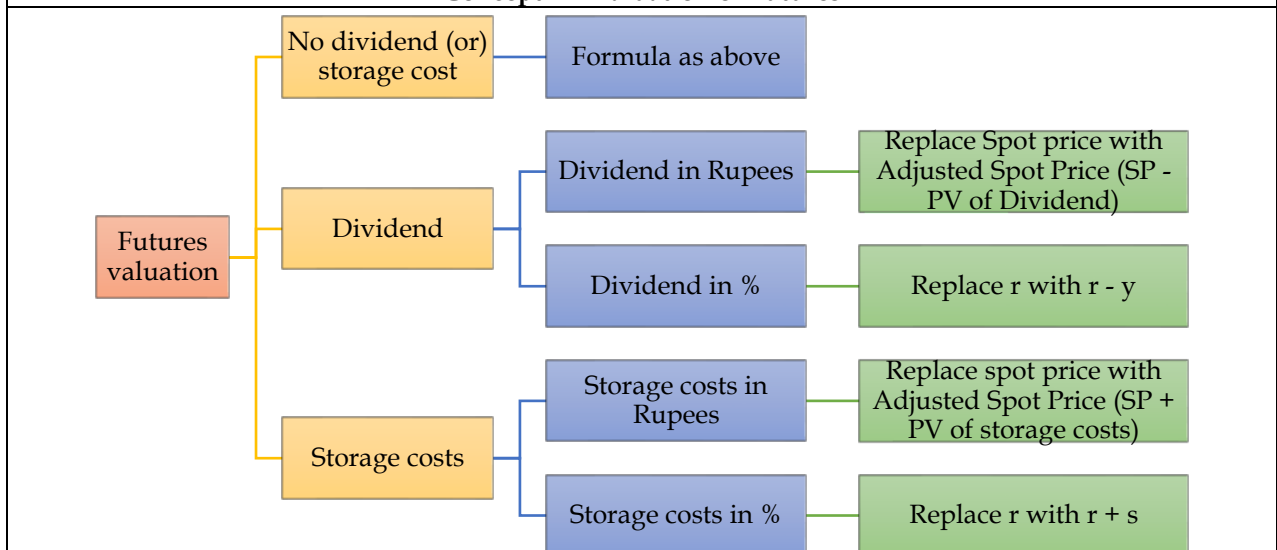
Concept 22 - MF NAV computation - Cash and Equity Component

Note:

- Closing NAV = Cash Component + Equity Component
- Equity Component = Opening Value +/- % change;
- % Change = Beta of Portfolio x Change in Market



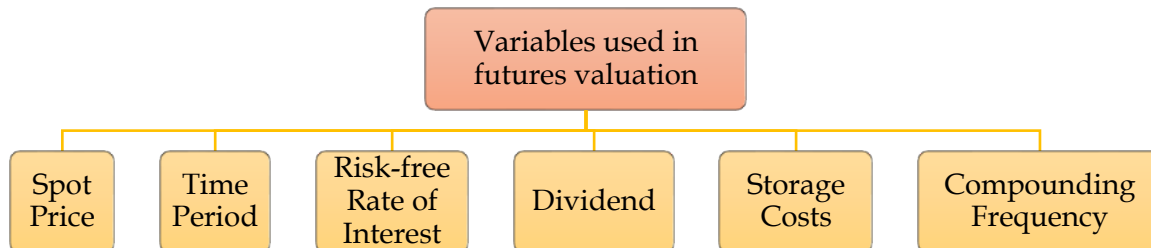
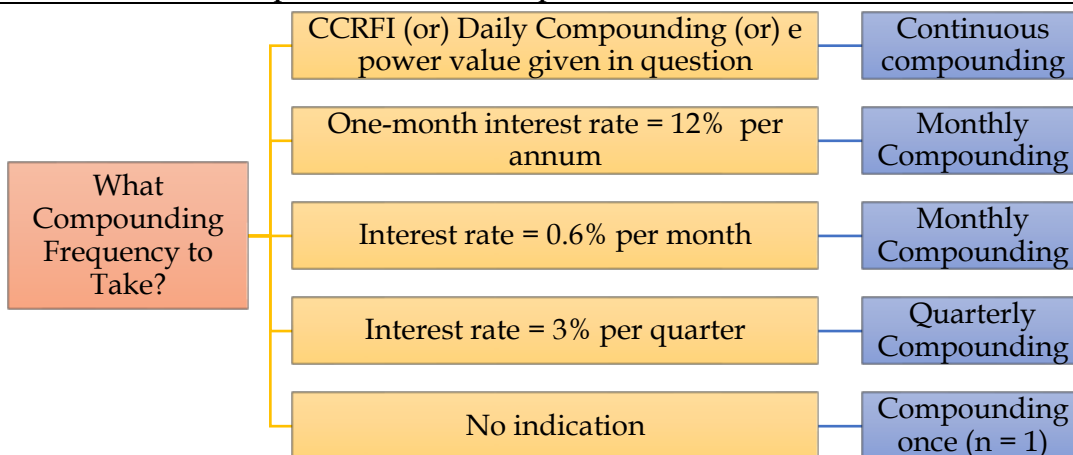
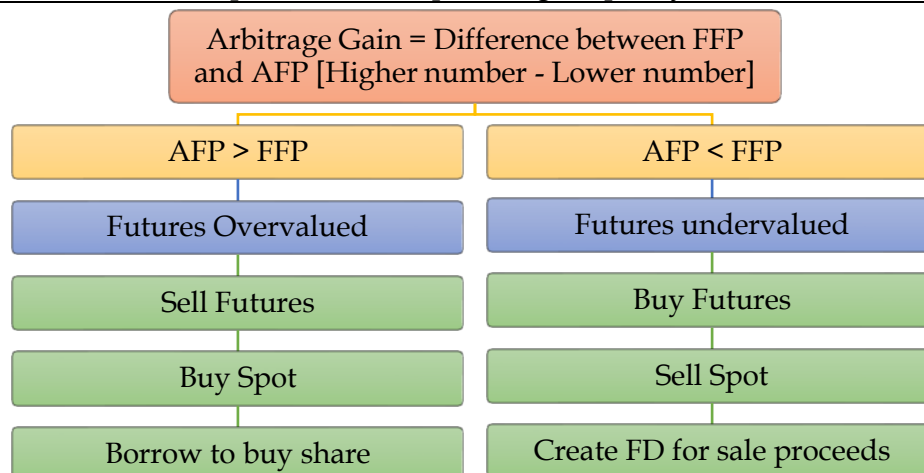
Concept 30 - Tracking error

Chapter 9 - Derivatives Analysis and Valuation**Concept 1 - Futures price vs Spot Price****Concept 1 - Futures price vs Spot Price****Concept 2 - Valuation of Futures**Note:

$\text{PV of Dividend Income} = \frac{\text{Dividend Income}}{e^{rt}} \quad (\text{or}) \quad \frac{\text{Dividend Income}}{(1+r)^t}$
$\text{PV of Storage costs} = \frac{\text{Storage costs}}{e^{rt}} \quad (\text{or}) \quad \frac{\text{Storage costs}}{(1+r)^t}$

Concept 4 - Formula Adjustments

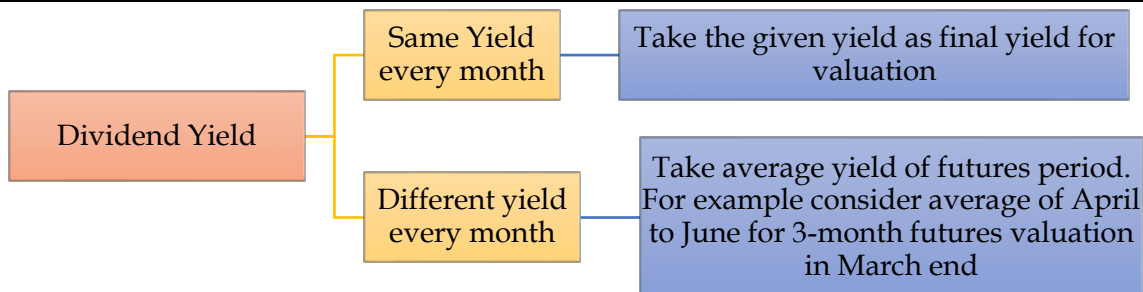
$$e^x = 1 + \frac{x}{1!} + \frac{x^2}{2!} + \frac{x^3}{3!} + \dots + \frac{x^n}{n!}$$

Concept 3 - How to Compute e^{rt} values**Concept 6 - Format for Computation of Fair Futures Price****Concept 7 - What Compounding Frequency to Take?****Concept 8 - Arbitrage Gain Computation and Strategy**

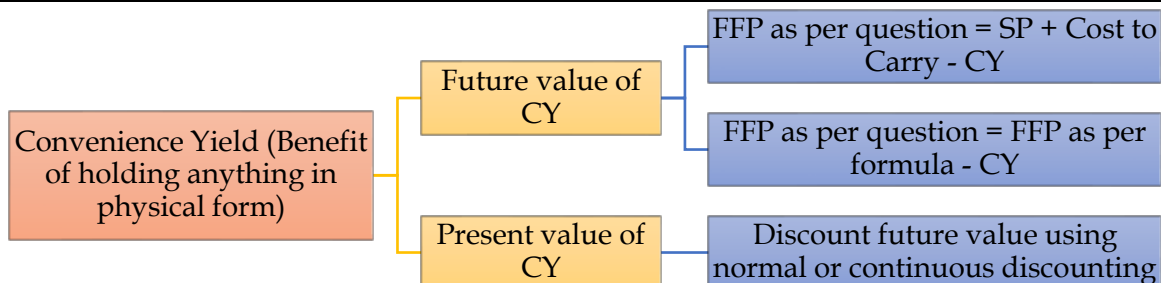
Cost to Carry (Total expenses associated with holding an underlying asset till expiry)

FFP as per Formula - Spot Price

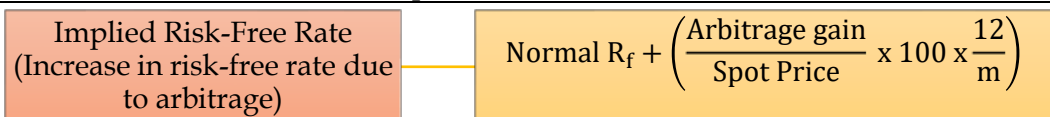
Concept 10 - Cost to Carry



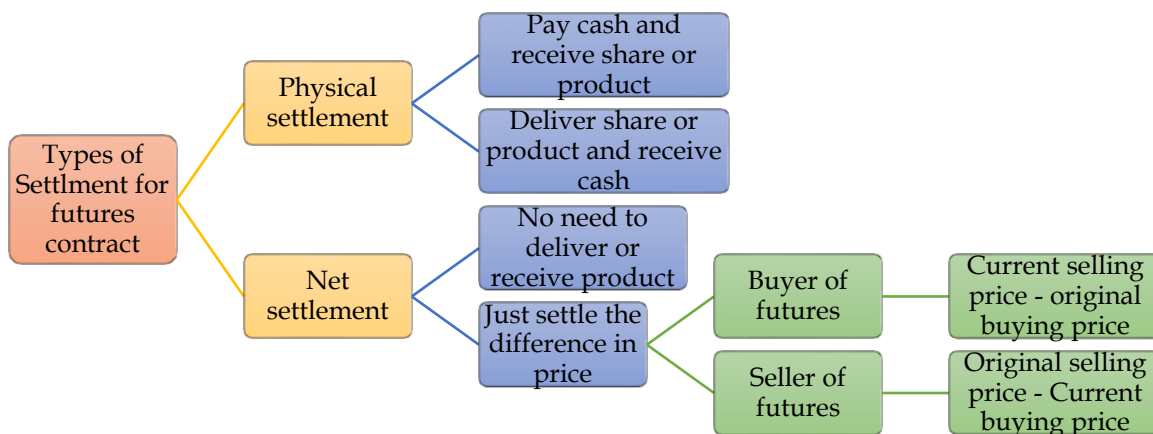
Concept 5 - Dividend Yield Computation



Concept 11 - Convenience Yield



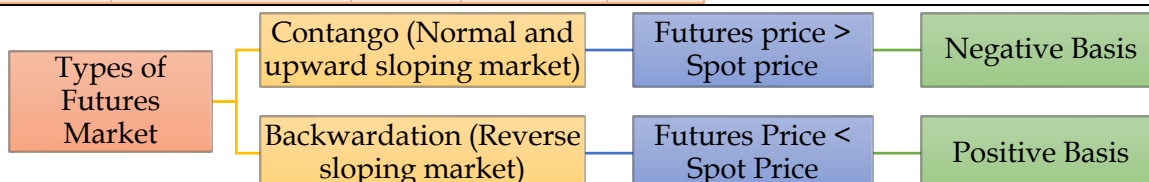
Concept 9 - Implied Risk-free Rate



Format 15 - Physical Settlement and Net Settlement

Format for computation of Net Settlement

Date	Position	Action	Ref date	Rate
10-Sep-23	Original Position	Sell	10-Dec-23	3,200
10-Dec-23	Opposite Position	Buy	10-Dec-23	-3,400
				-200



$$\text{Basis} = \text{Spot Price} - \text{Futures Price}$$

Concept 12 - Contango and Backwardation Market

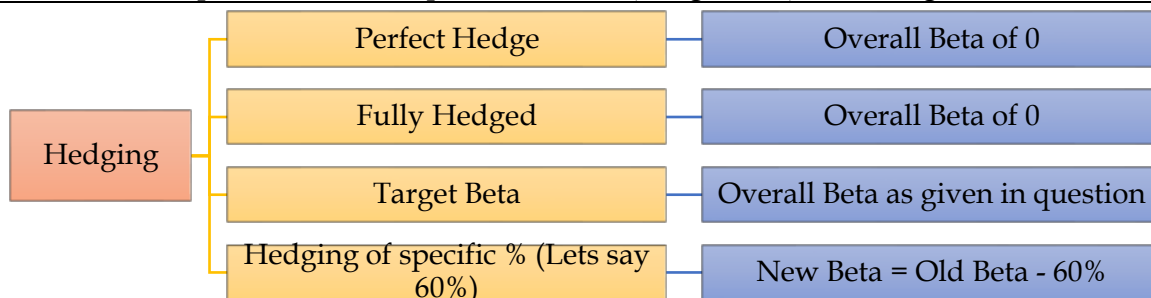
Beta (Hedge Ratio) - Ratio between spot position and Index futures for hedging

$$F2 \text{ of Beta computation} = \frac{\text{SD of spot}}{\text{SD of futures}} \times \text{Correlation}$$

Can be used to find % change in share price

$$\% \text{ Change in share} = \text{Beta of Share} \times \% \text{ Change in Market}$$

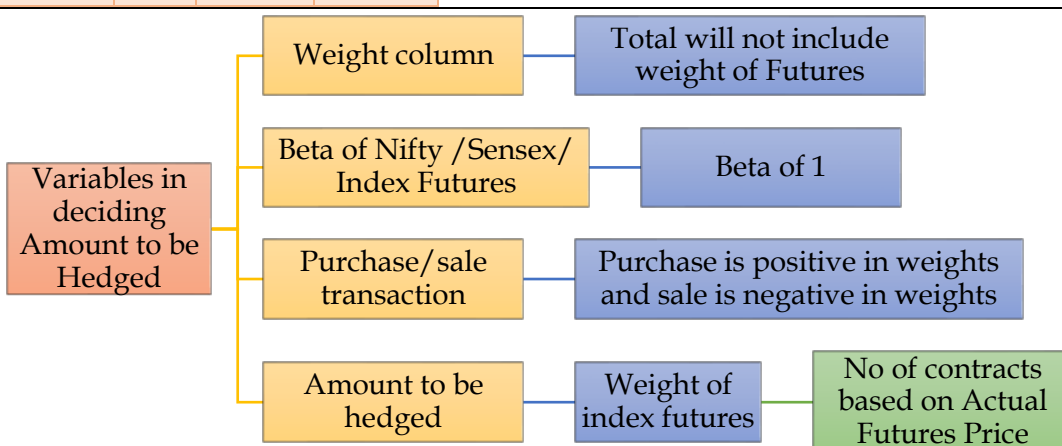
Concept 13 and 14 - Computation of Beta (Hedge Ratio) and Change in Price



Concept 16 (Hedging - Perfect Hedge), Concept 17 (Hedging - Target Beta), Concept 18 (Hedging - Protection of Specified %)

Format for computation of Amount to be Hedged

Security	Beta	Weight	Product
Portfolio			
Index Futures			
Overall			



Note:

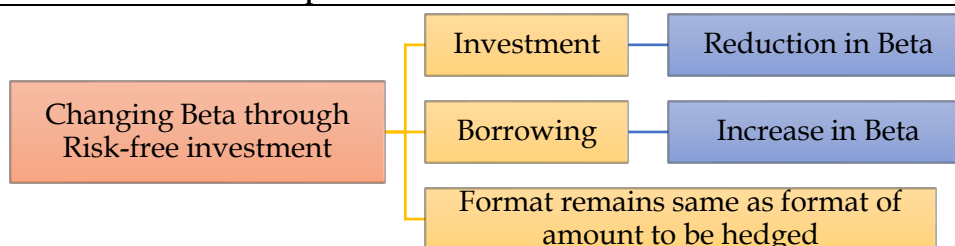
$$\text{No of contracts} = \frac{\text{Amount to be hedged (weight of Index Futures)}}{\text{Size of One Contract (Lot size} \times \text{Actual Futures Price)}}$$

Concept 19 - Hedging - Size of One Contract

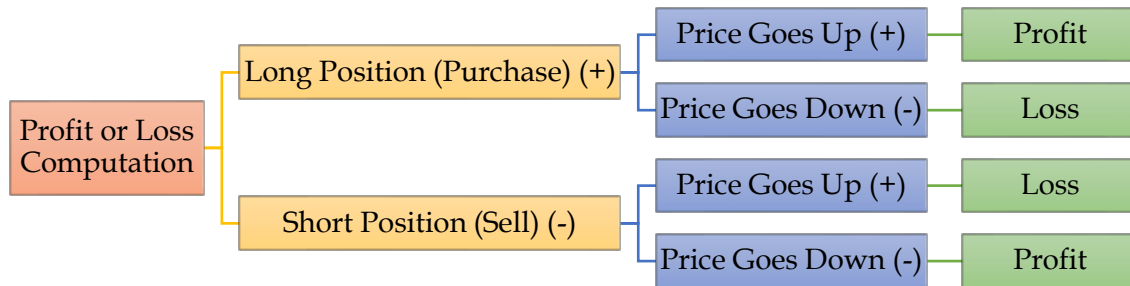
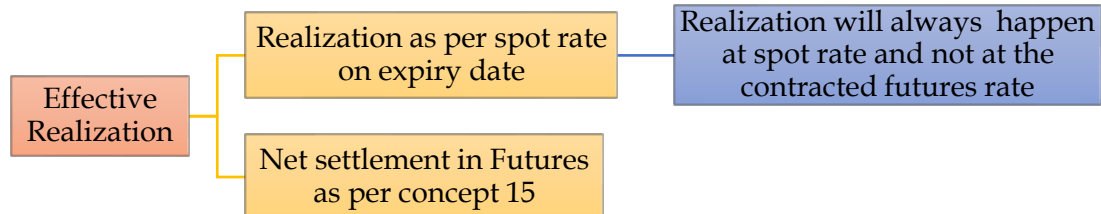
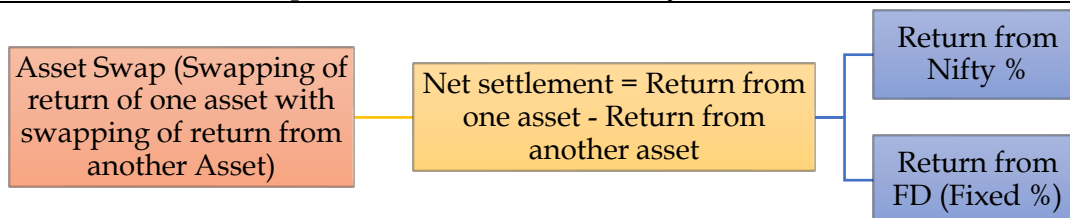
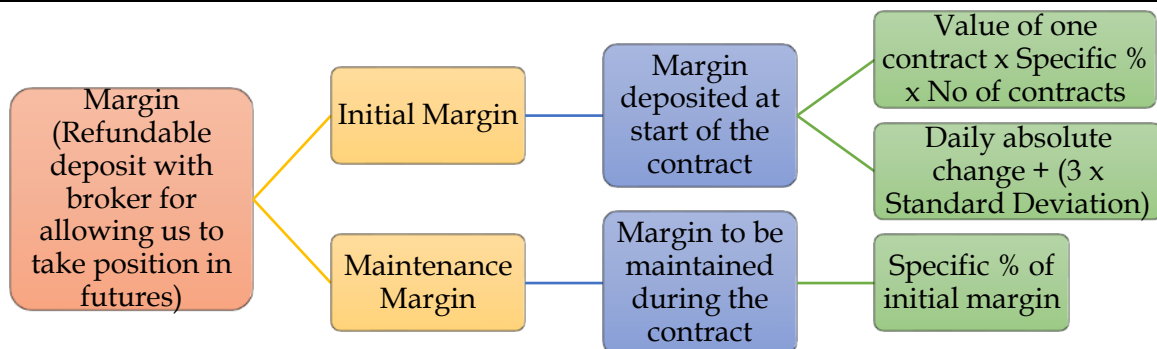
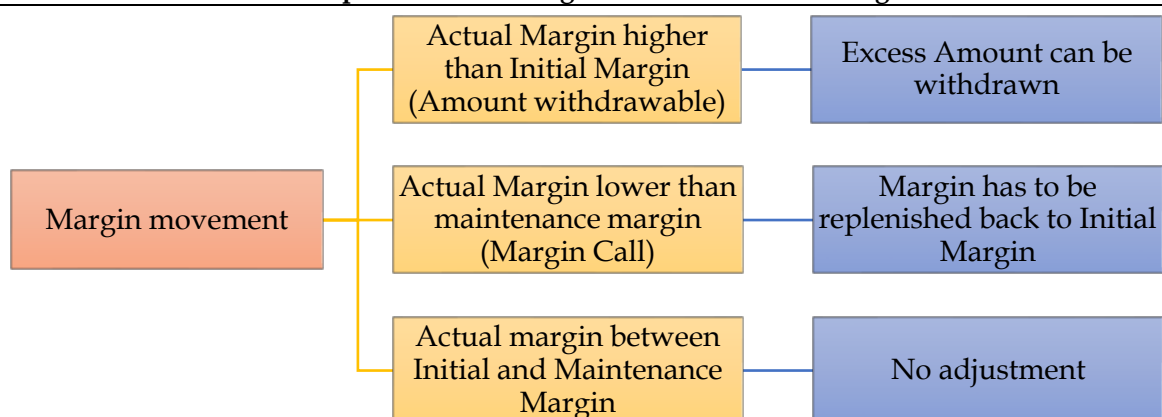
Normal Rate can be converted into CCRFI rate using Natural log values

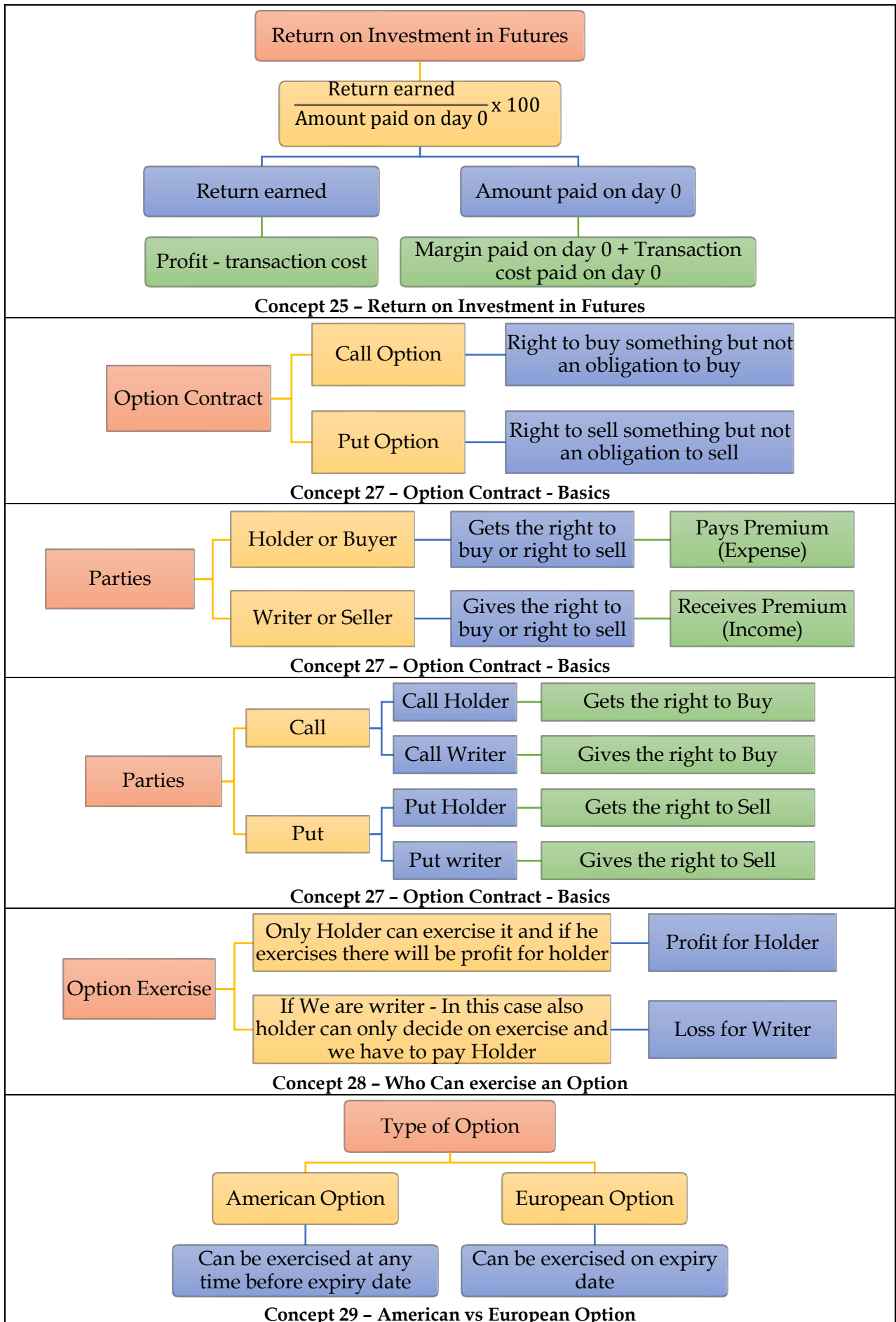
CCRFI rate can be converted into normal rate using e^{rt} values

Concept 21 - Normal Rate and CCRFI Rate



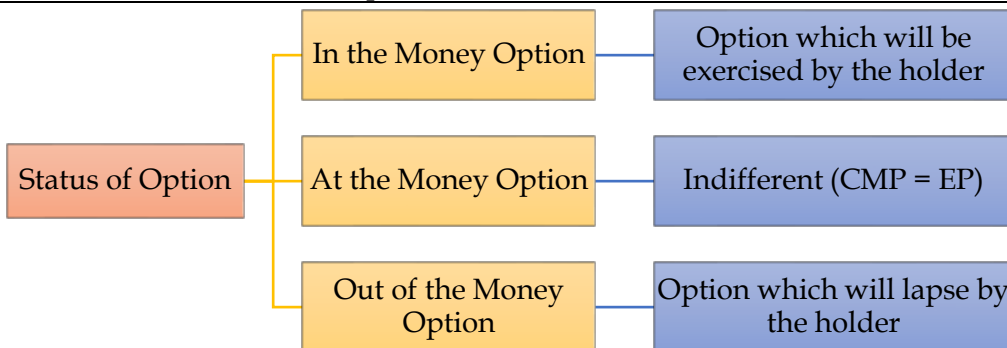
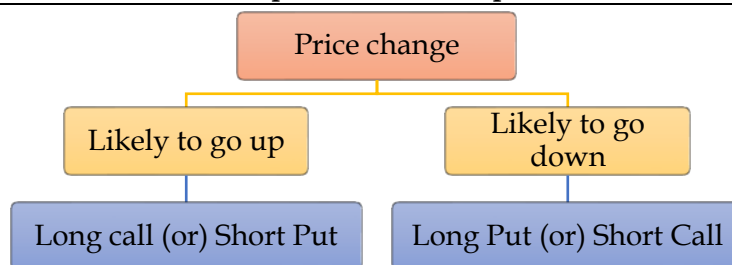
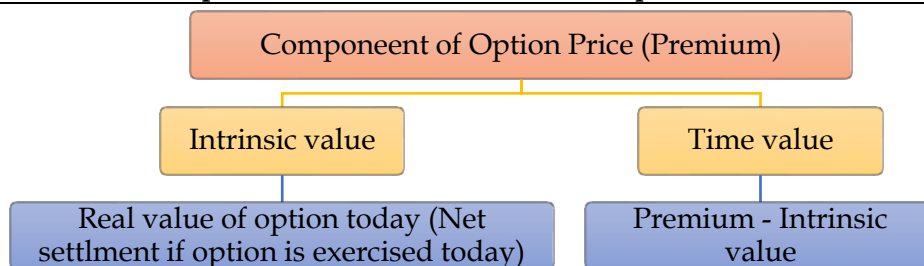
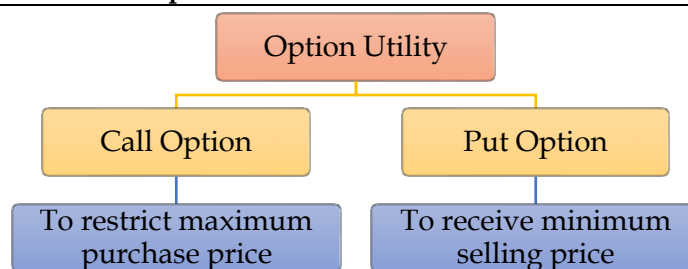
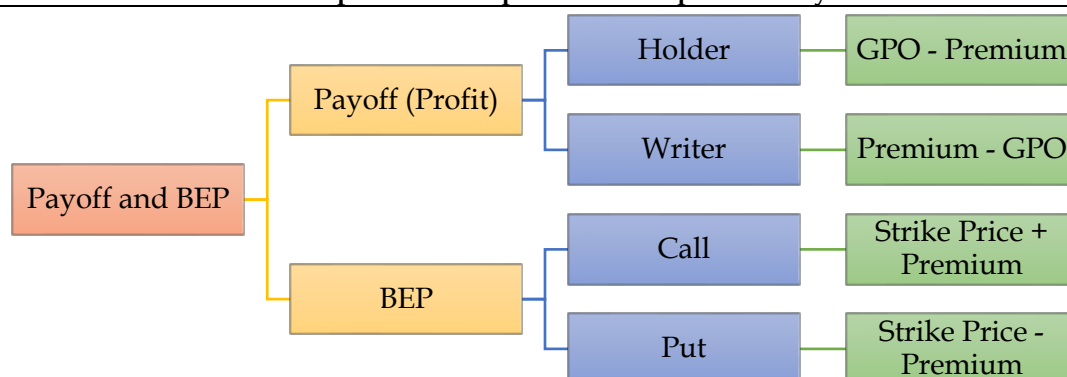
Concept 20 - Modification of Portfolio Beta through Risk-Free Investment/Borrowing

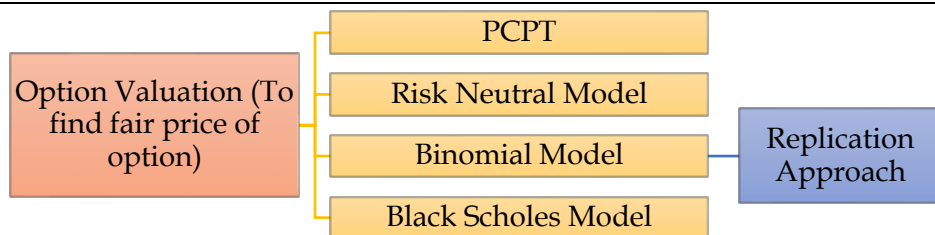
**Concept 22 - Profit/Loss on Different Positions****Concept 23 - Effective Realization/Payment in Futures****Concept 26 - Asset Swap****Concept 24 - Initial Margin and Maintenance Margin****Concept 24 - Initial Margin and Maintenance Margin**



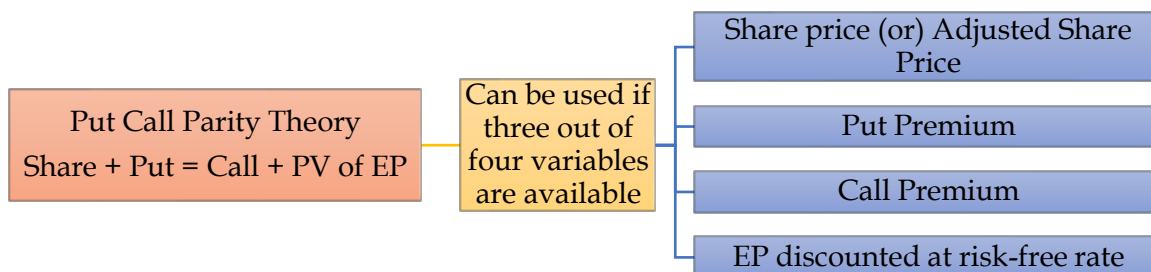
Exercise Price or Strike Price

Price at which the share (or) Product can be bought or sold

Concept 30 - What is Exercise Price?**Concept 31 - Status of Option****Concept 32 - What action to be taken in Options Market?****Concept 33 - Intrinsic Value vs Time Value****Concept 34 - Call Option vs Put Option Utility****Concept 35 - Payoff of option and Break-even Price**



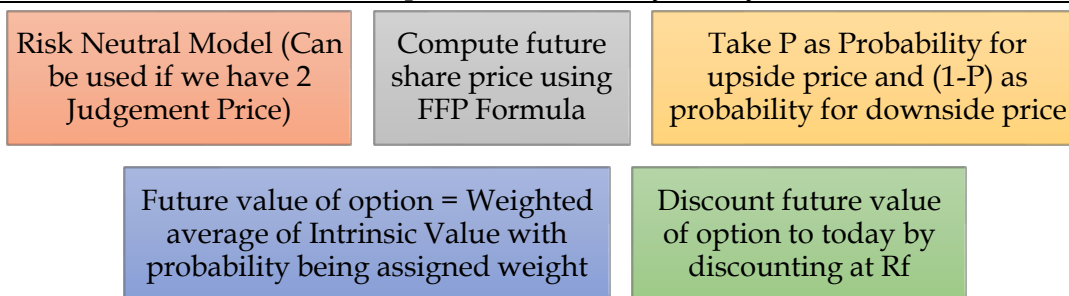
Concept 37 - Methods of Option Valuation



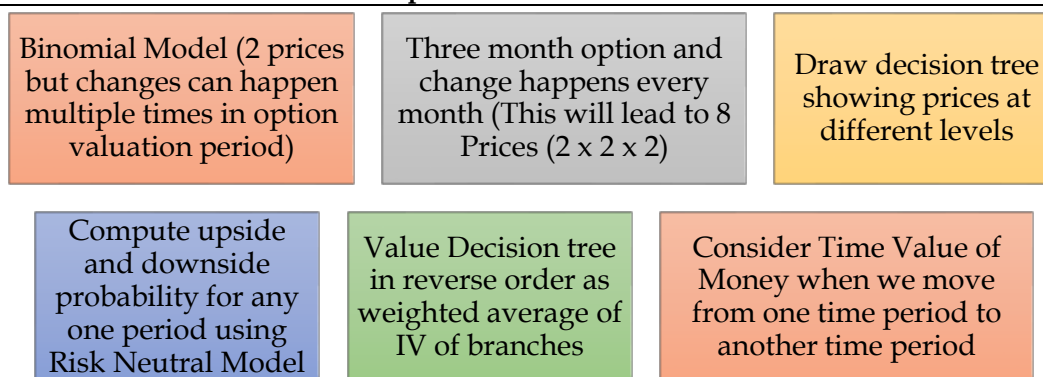
Note:

- Adjusted Share price [Share price - PV of Dividend] (or)
- Adjusted share price = Share price $\times e^{-yt}$ (or) $\frac{\text{Share price}}{(1+y)^n}$

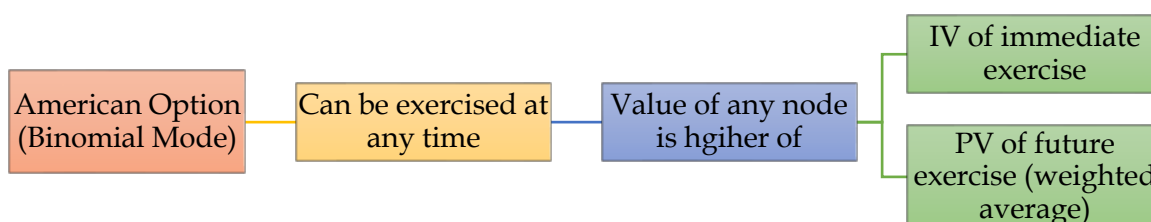
Concept 38 - Put Call Parity Theory



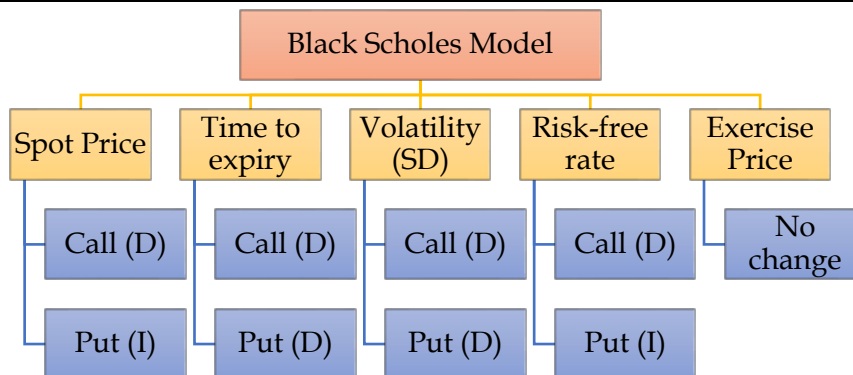
Concept 39 - Risk Neutral Model



Concept 40 - Binomial Model (European Option)



Concept 40 - Binomial Model (American Option)

**Note:**

- D = Direct Relationship; I = Inverse Relationship

Concept 41 - Black Scholes Model

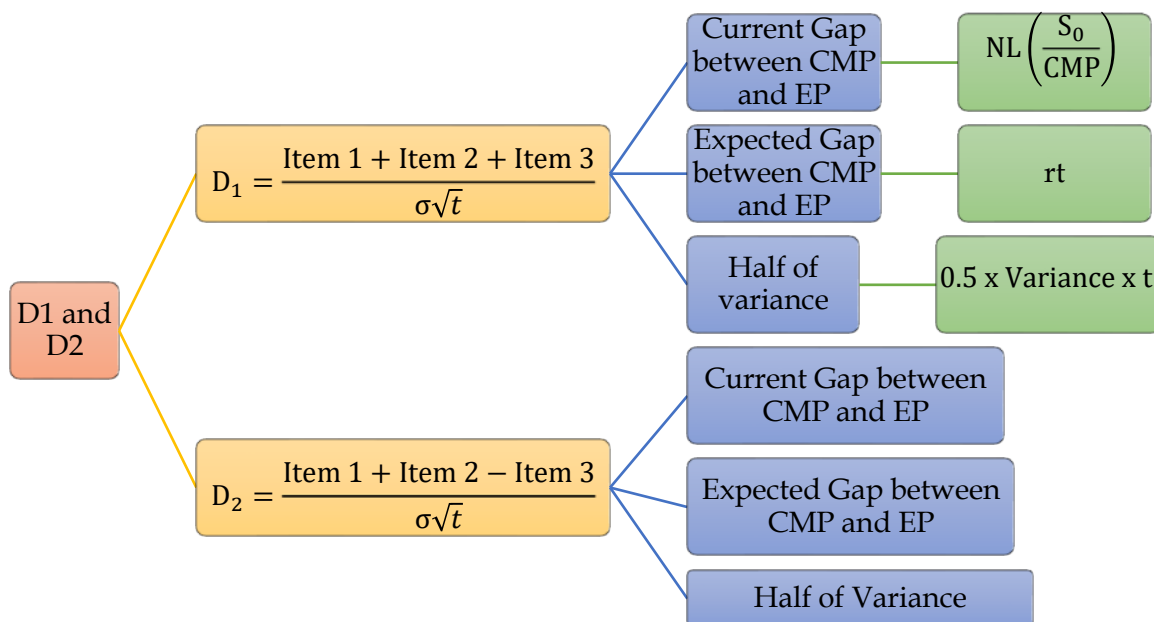
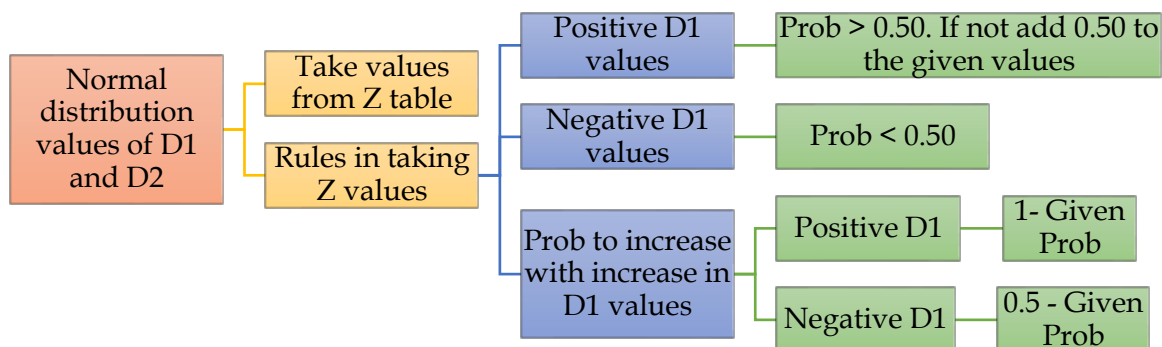
$$\text{Value of Call} = (S_0 \times N(d_1)) - (PV_{EP} \times N(d_2))$$

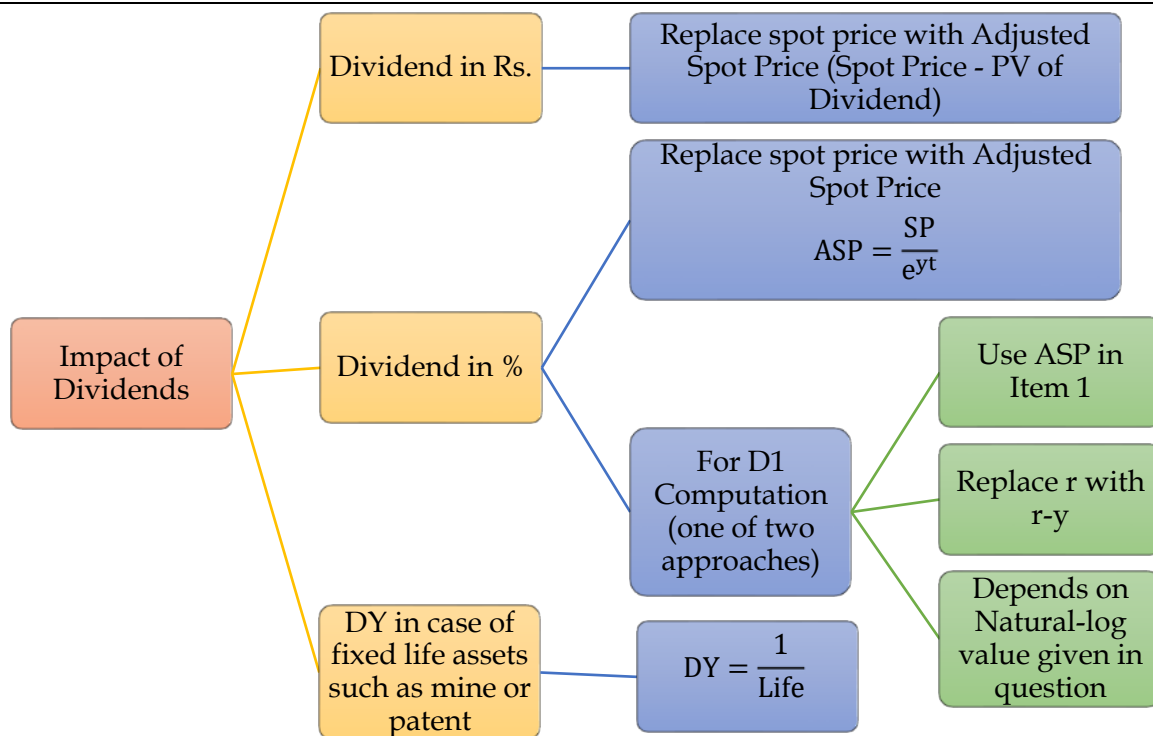
$$S_0 = \text{CMP}$$

$$N(d_1) = \text{Call Delta}$$

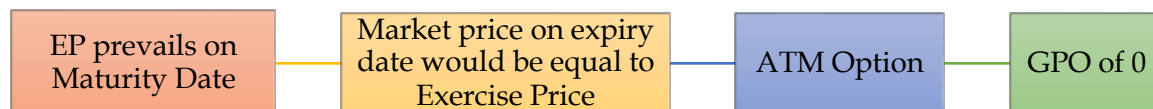
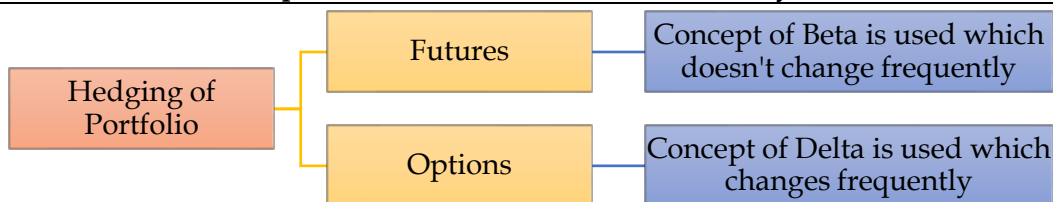
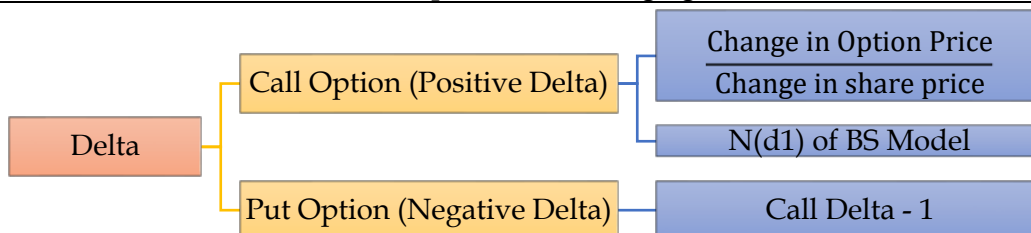
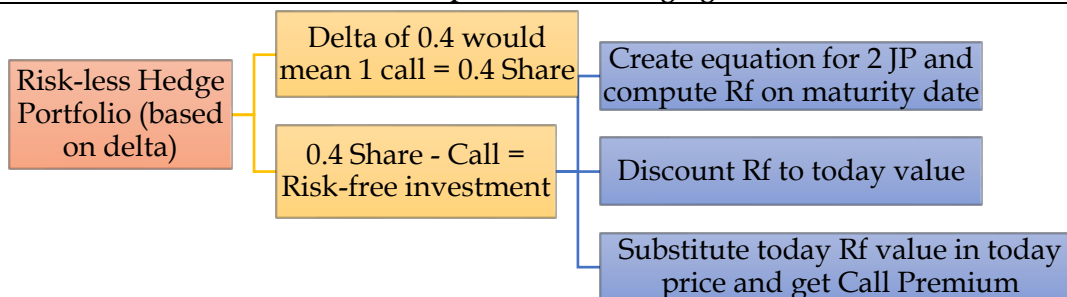
Note:

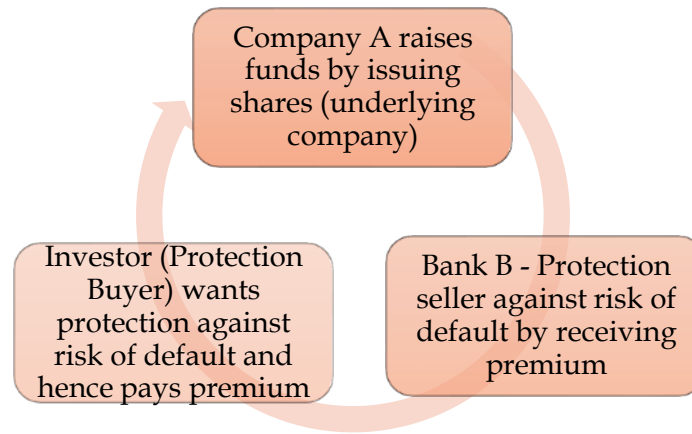
- Put will be valued using PCPT after valuation of call

Concept 41 - Black Scholes Model**Concept 41 - Black Scholes Model****Concept 42 - How to Compute N(d1) and N(d2) Values**

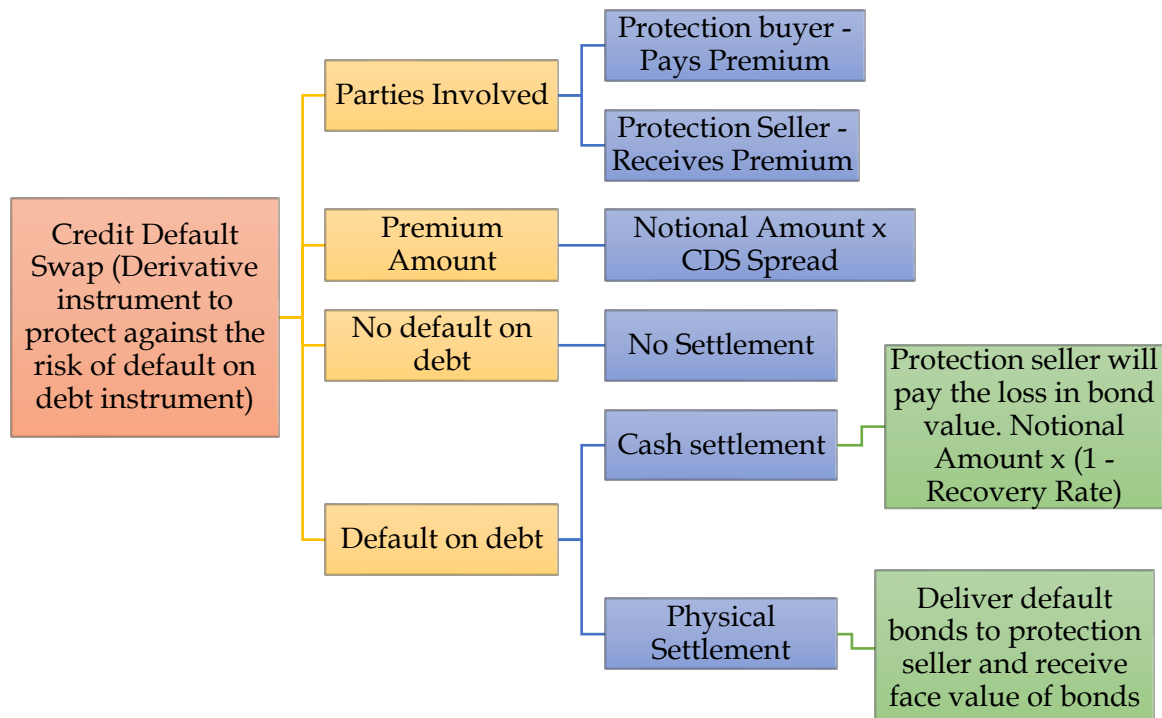
**Note:**

- Present value of Exercise Price will always be discounted at r and not with $r-y$. This is because there is no impact of Dividend on EP

Concept 41 - Black Scholes Model**Concept 36 - Exercise Price Prevails on Maturity Date****Concept 43 - Delta Hedging****Concept 43 - Delta Hedging****Concept 44 - Replication Approach of Option Valuation (Sub-Part of Binomial Model)**



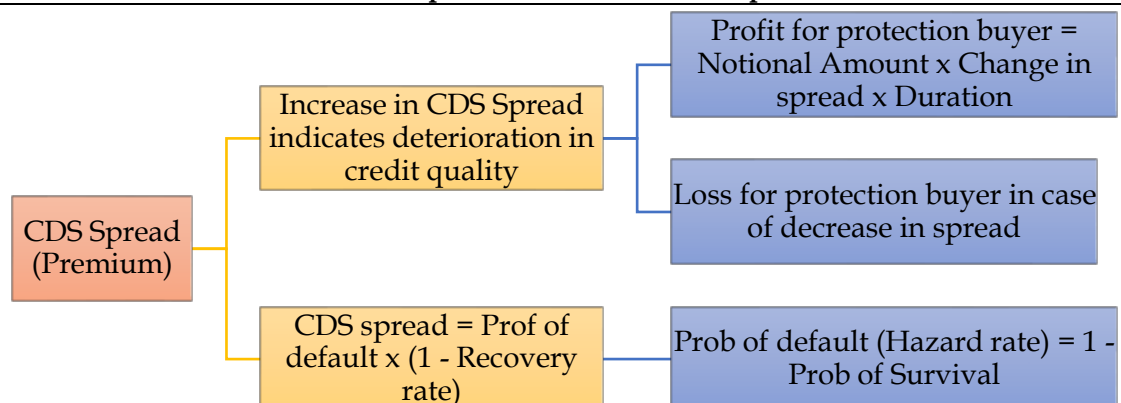
CDS Contract Parties



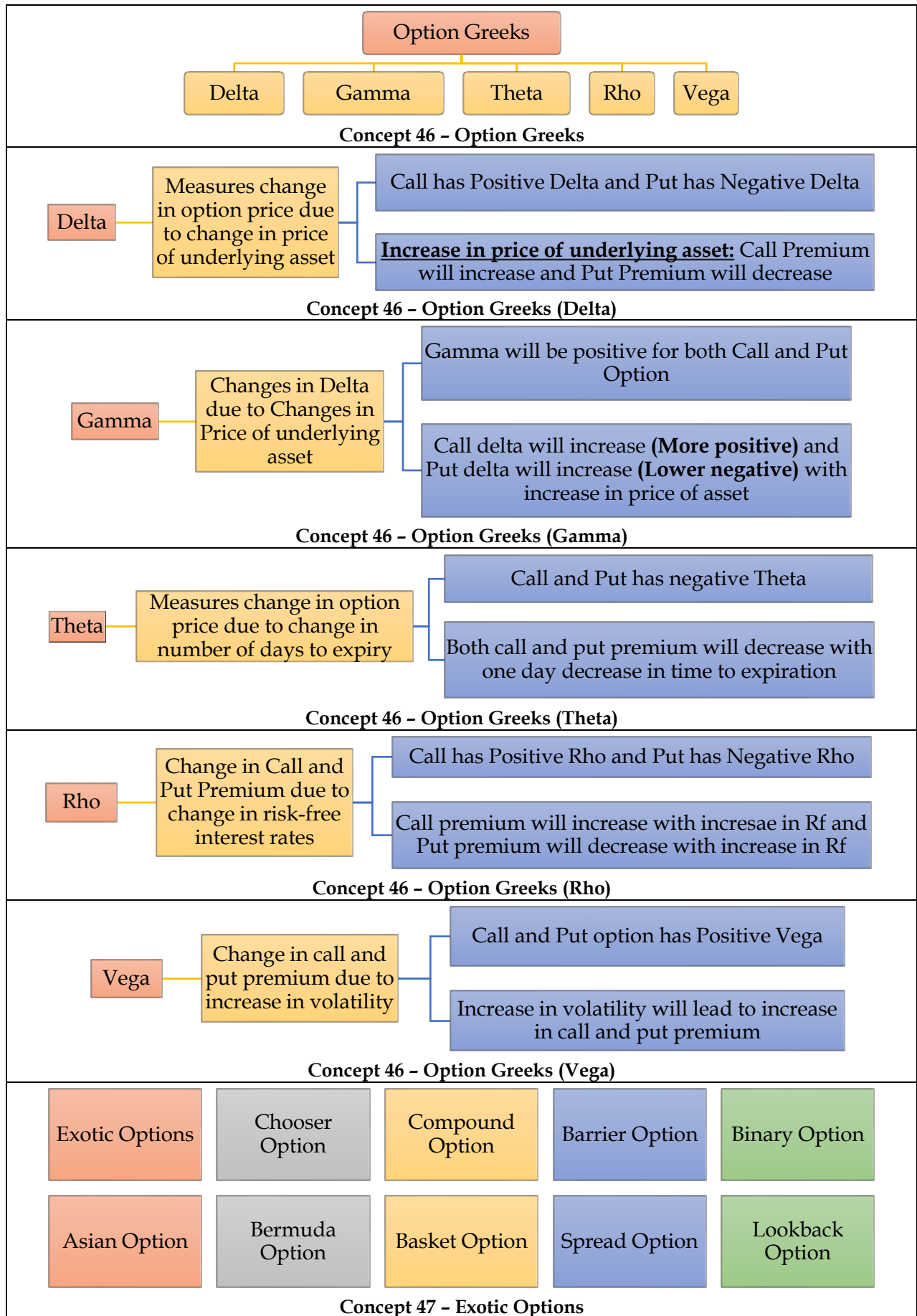
Note:

- Index CDS Comprises multiple securities; notional amount reduces when constituents default

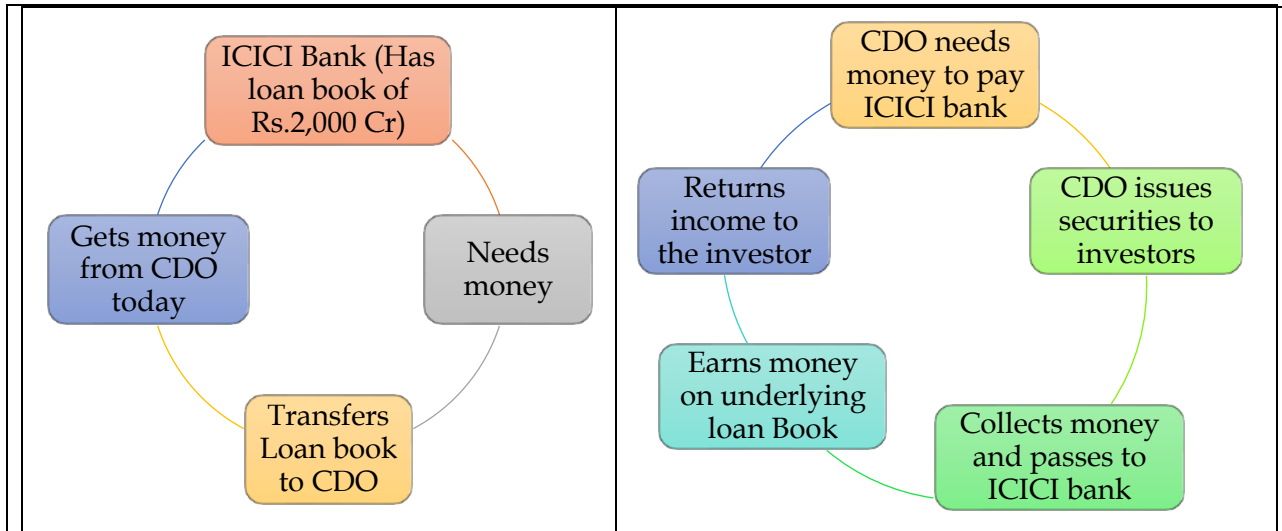
Concept 45 - Credit Default Swaps



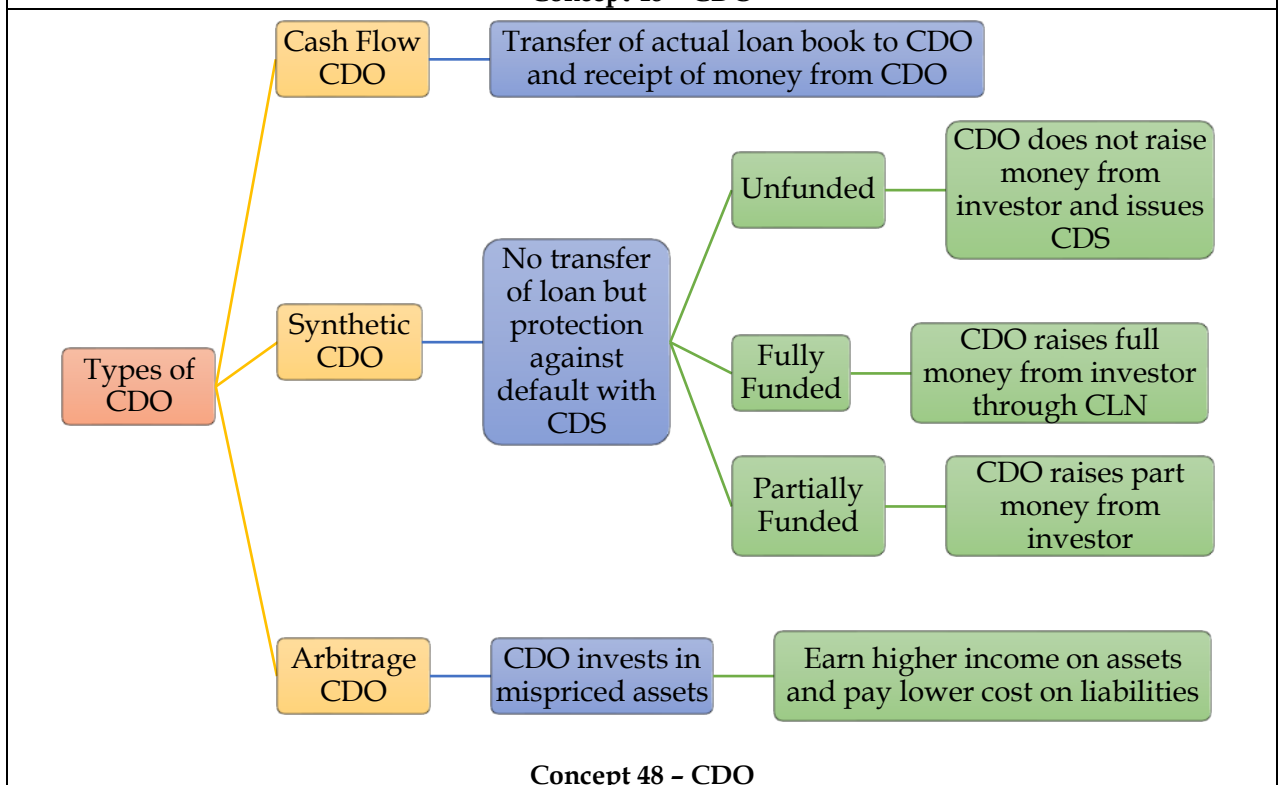
Concept 45 - Credit Default Swaps



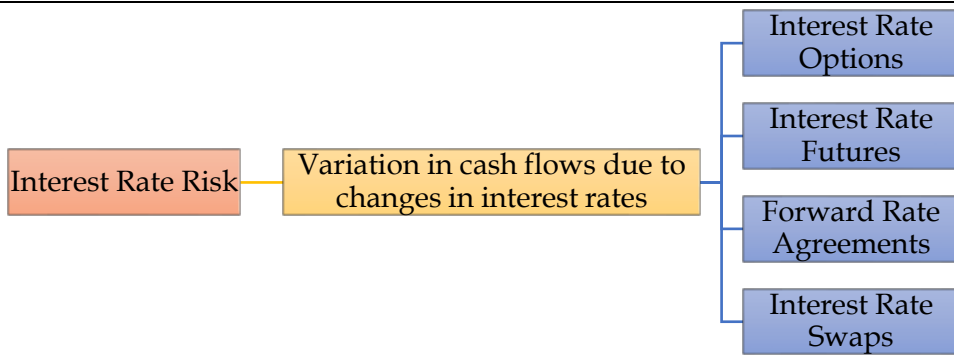
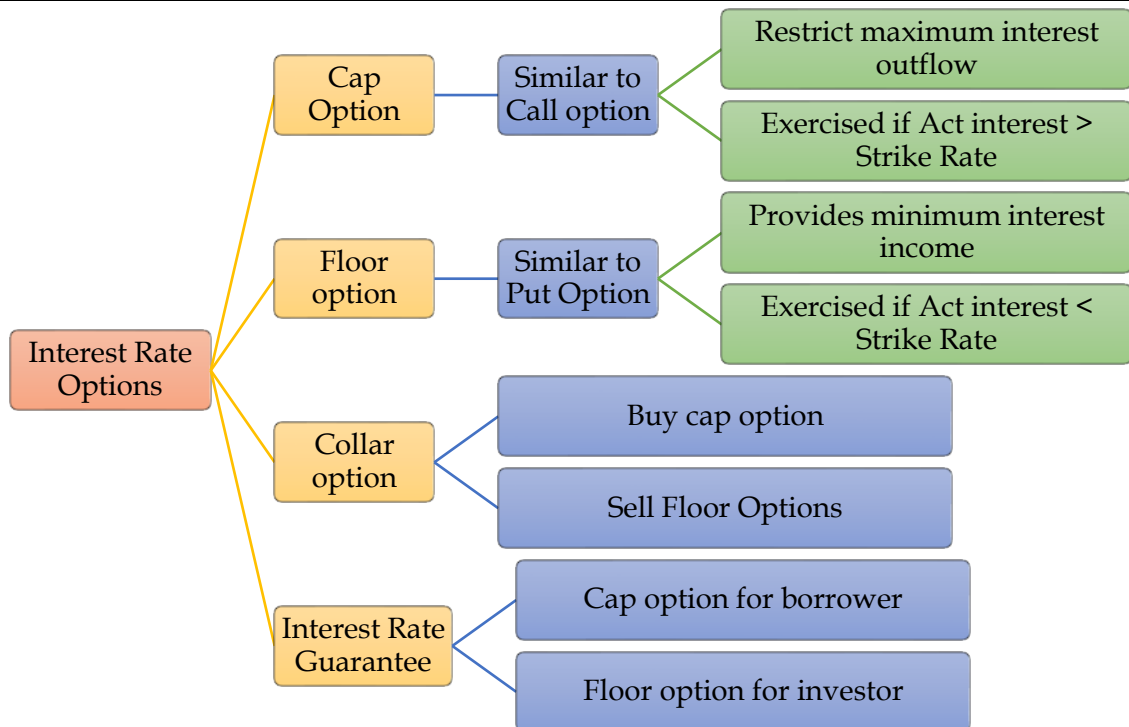
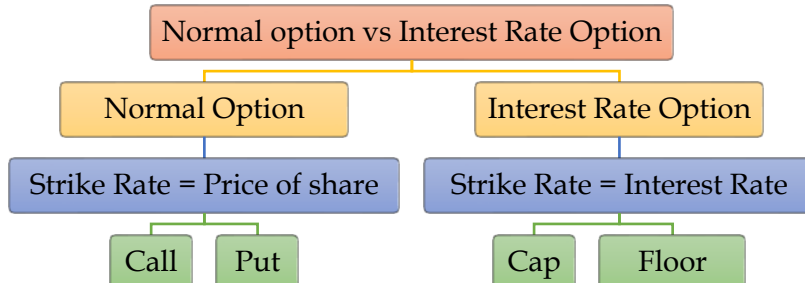
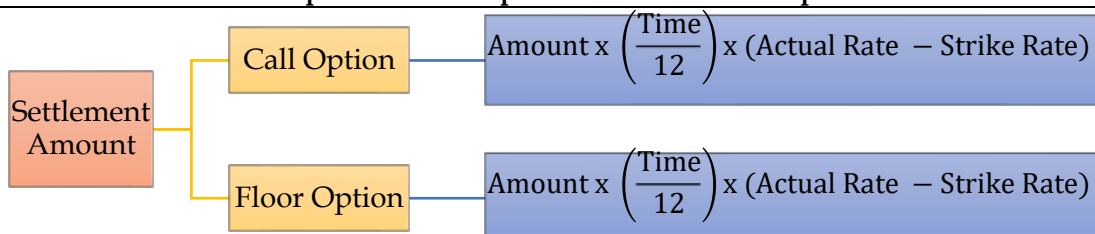
Chooser Option	Give a choice to the holder to choose the option to be a call option or Put option	To be decided on a specific date during the life of the option
Concept 47 - Chooser Option		
Compound Option	Gives a choice to the option holder to buy another call or put option by paying a specific premium	Original option can be a call option and the second option can be a call or put option
Concept 47 - Compound Option		
Barrier Option	Contract will get activated only if the price reaches a specific price	Price not reached - no check on exercise on maturity date
Concept 47 - Chooser Option		
Binary Option	Specific payoff if the option is exercised (Not the difference between exercise price and CMP)	Zero payoff if the option is not exercised
Concept 47 - Binary Option		
Asian Option	Payoff is computed by comparing the average price of the underlying asset during contract with the strike price	
Concept 47 - Asian Option		
Bermuda Option	Between American Option and European Option	Can be exercised on multiple specific dates (like month end) during life of contract
Concept 47 - Bermuda Option		
Basket Options	Option contract where underlying asset is a portfolio of assets	Call option and Put option on basket can be taken where strike price is compared with value of portfolio
Concept 47 - Basket Option		
Spread Option	Underlying asset is the difference in prices of two underlying assets	Call and Put option on spread can be taken where strike price is compared with the actual spread in prices of 2 shares
Concept 47 - Spread Option		
Look Back Option	Strike Price is not pre-decided in this option and can be taken as the most favorable price during the life of the contract	Strike price of call option = Minimum price Strike price of Put option = Maximum Price
Concept 47 - Look Back Option		



Concept 48 - CDO

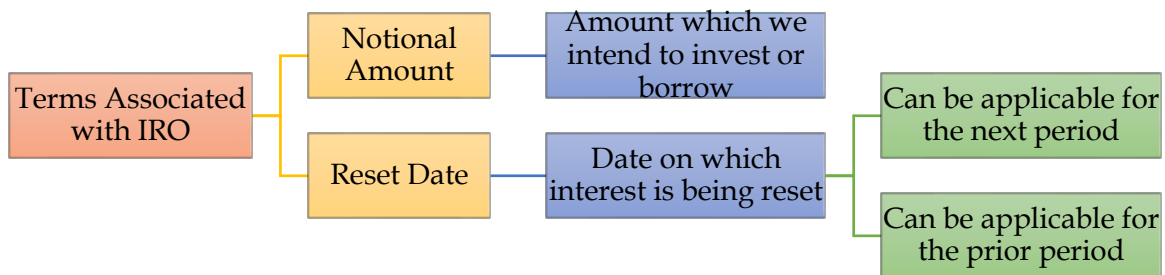


Concept 48 - CDO

Chapter 12 – Interest Rate Risk Management**Concept 1 - Interest Rate Risk****Concept 2 - Interest Rate Options****Concept 3 - Normal Options vs Interest Rate Options****Note:**

- Settlement Amount is inflow for holder and outflow for writer

Concept 4 - Interest Rate Option (Settlement)

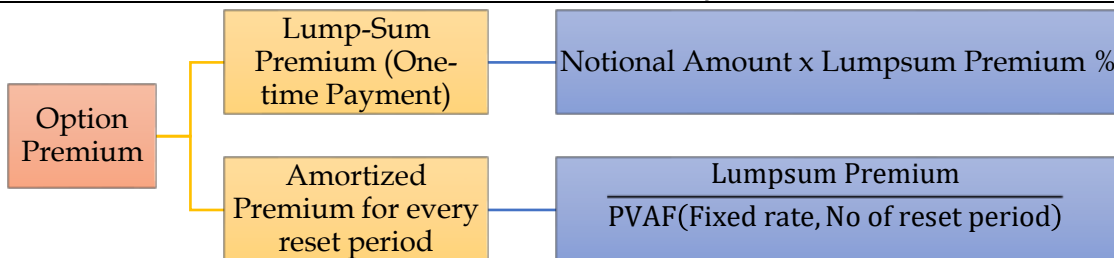


Concept 5 - Terms Associated with Interest Rate Options

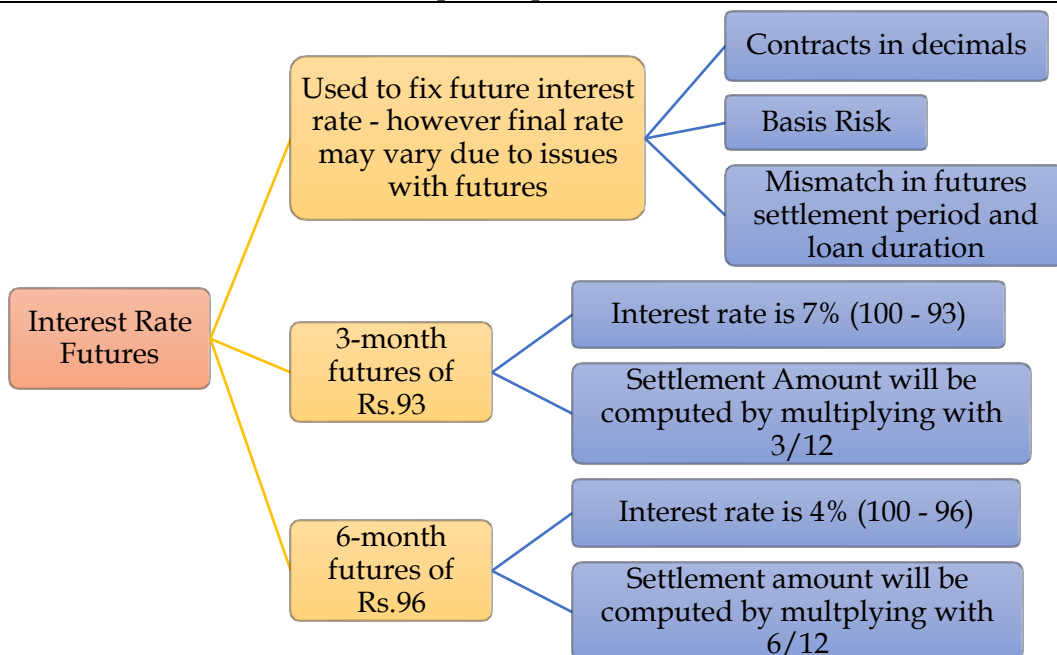
Format for computation of Interest Outflow:

Reset Date	Base Rate	No of days	Our Borrowing rate	Interest paid (A)	Premium Paid (B)	Cap Receipt (C)	Floor Payment (D)	Total Interest (A+B-C+D)

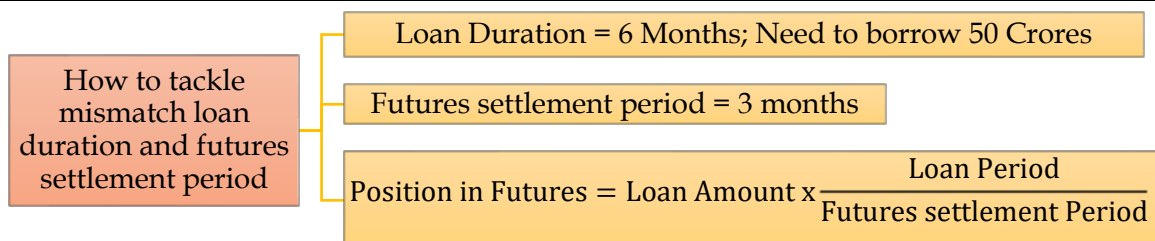
$$\text{Effective Interest Rate} = \frac{\text{Total Interest Paid}}{\text{Loan Amount}} \times \frac{365}{\text{Number of days of loan}} \times 100$$



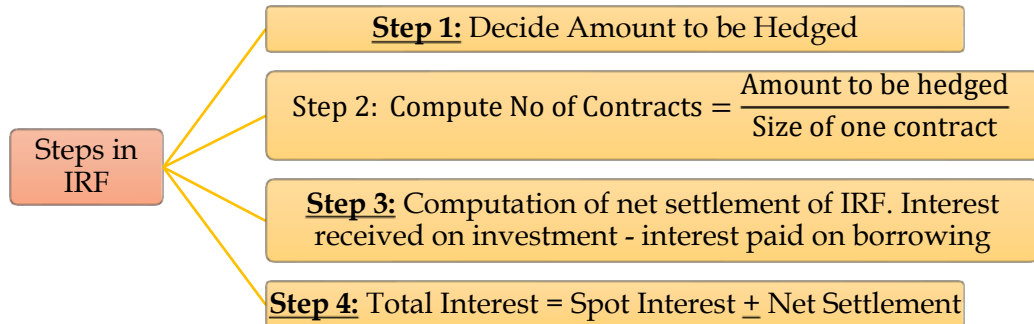
Concept 6 - Option Premium



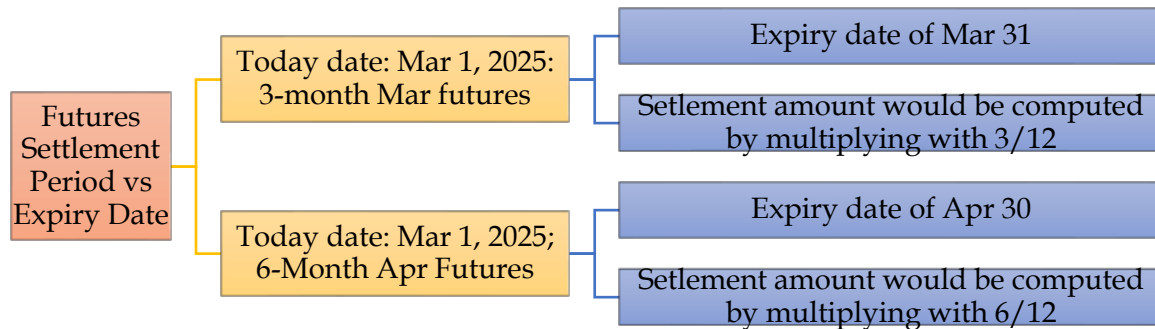
Concept 7 - Interest Rate Futures



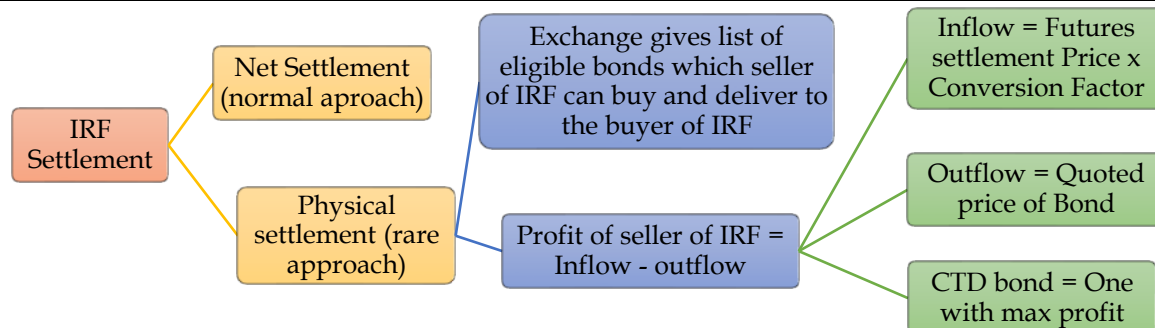
Concept 7 - Interest Rate Futures



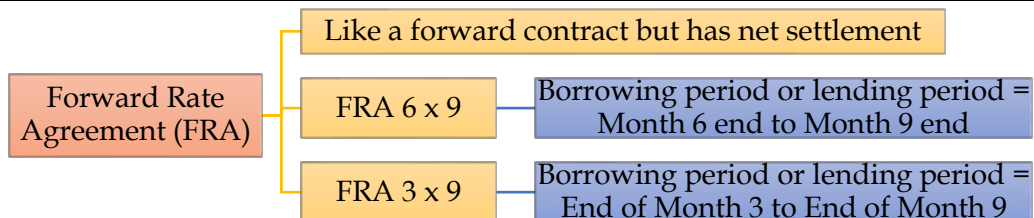
Concept 8 - Steps in Interest Rate Futures



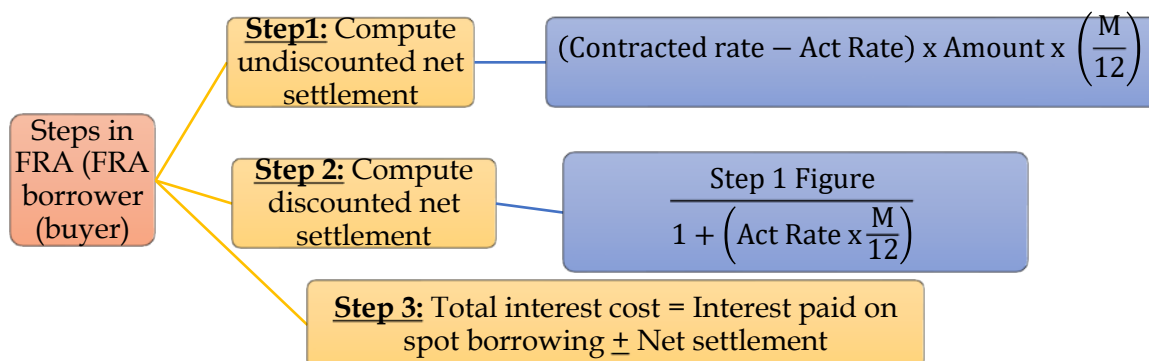
Concept 8 - Steps in Interest Rate Futures



Concept 9 - Cheapest to Deliver Bond (CTD Bond)



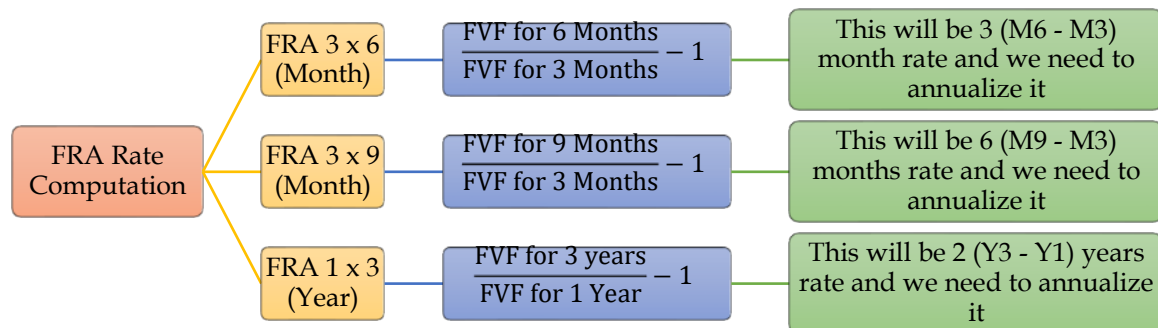
Concept 10 - Forward Rate Agreement (FRA)



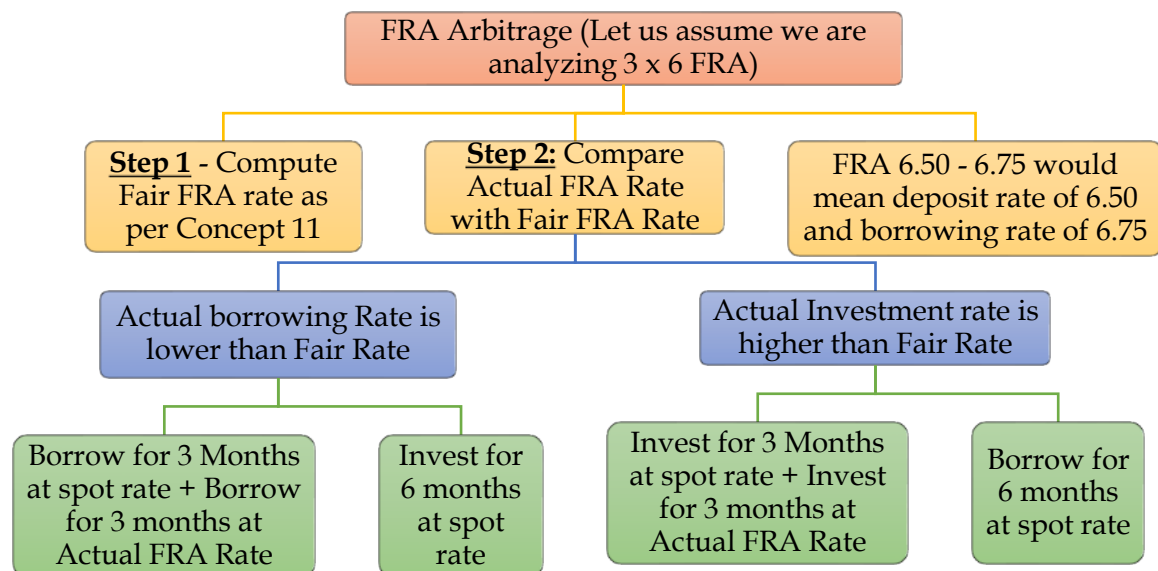
Note:

$$\text{Effective Interest Cost} = \frac{\text{Total Interest Cost}}{\text{Loan Amount}} \times \frac{12}{m} \times 100$$

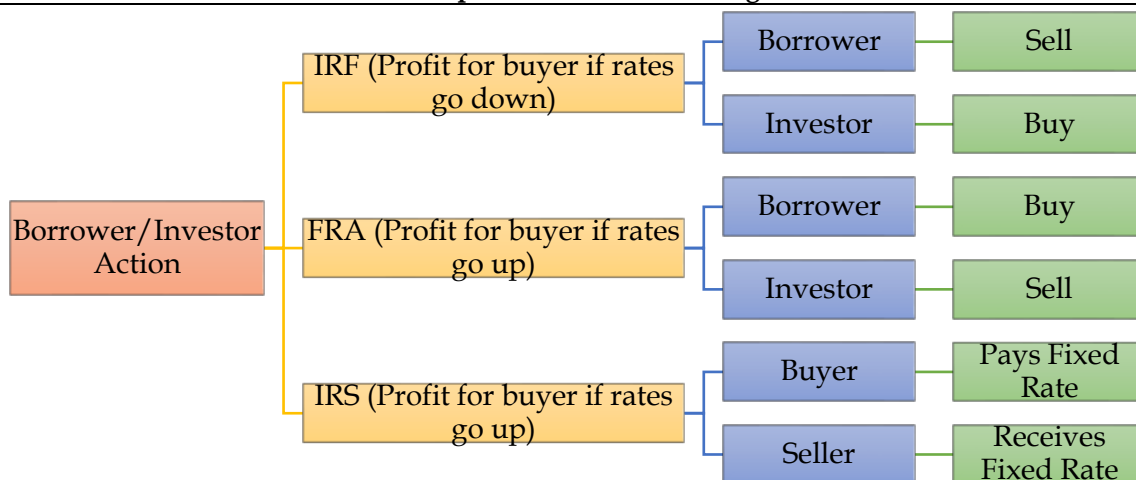
Concept 10 - Forward Rate Agreement (Steps for borrower - Opposite steps for lender)



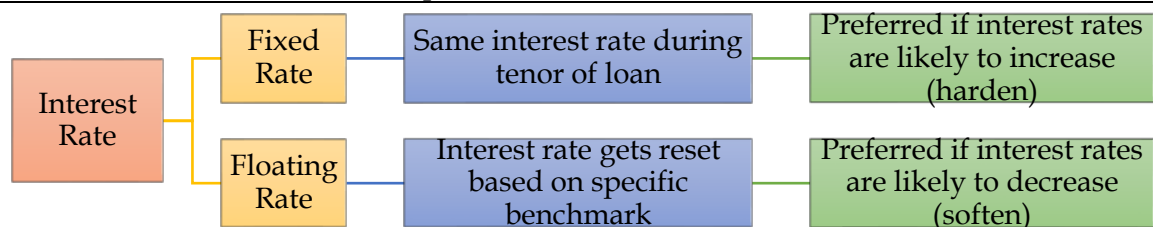
Concept 11 - Computation of FRA Rate



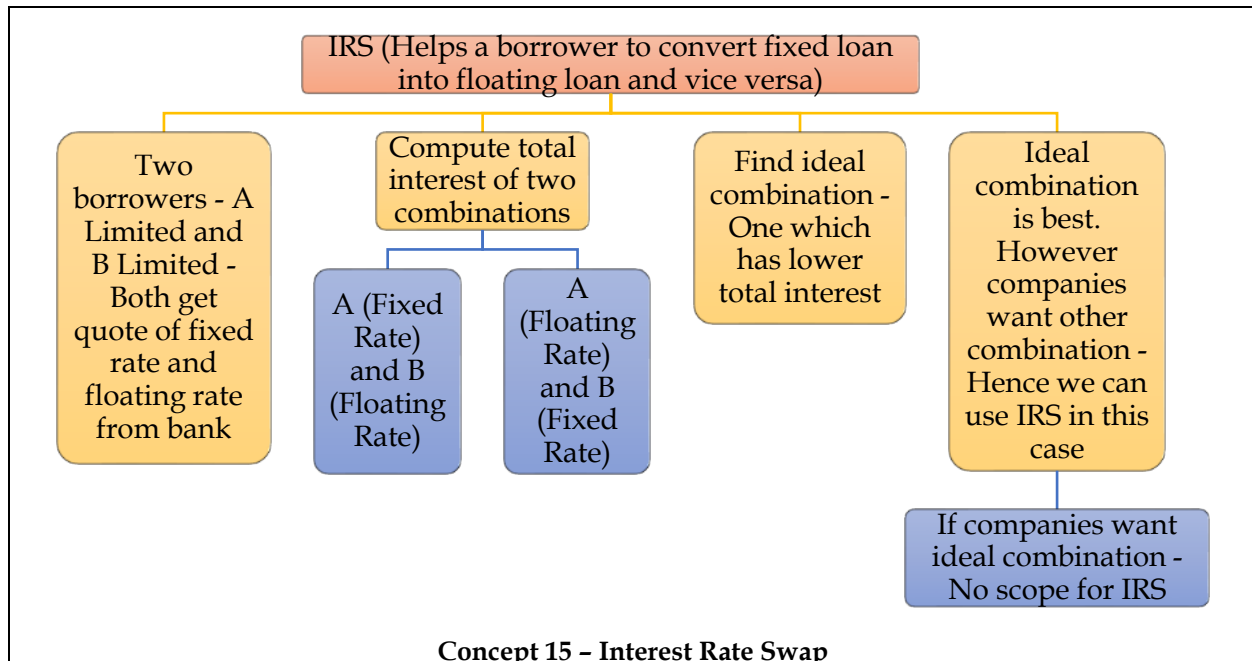
Concept 12 - FRA and Arbitrage



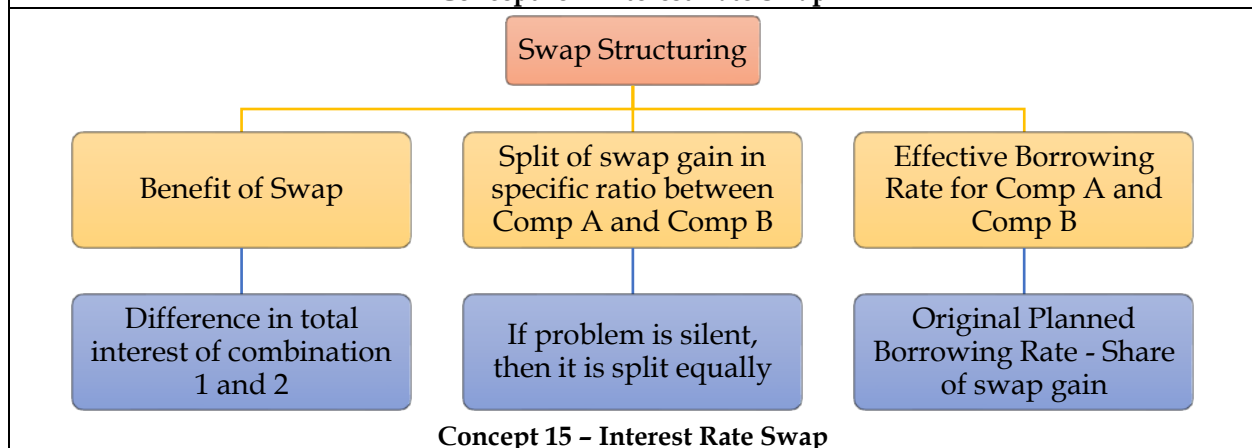
Concept 13 - Borrower/Investor Action



Concept 14 (Types of Loans) and Concept 16 (Hardening and Softening of Interest Rates)



Concept 15 - Interest Rate Swap



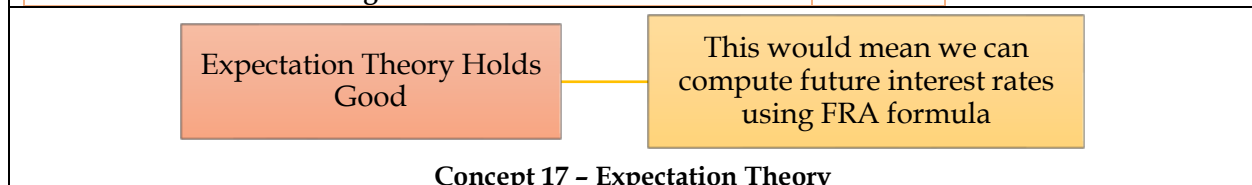
Concept 15 - Interest Rate Swap

Swap Structuring without intermediary

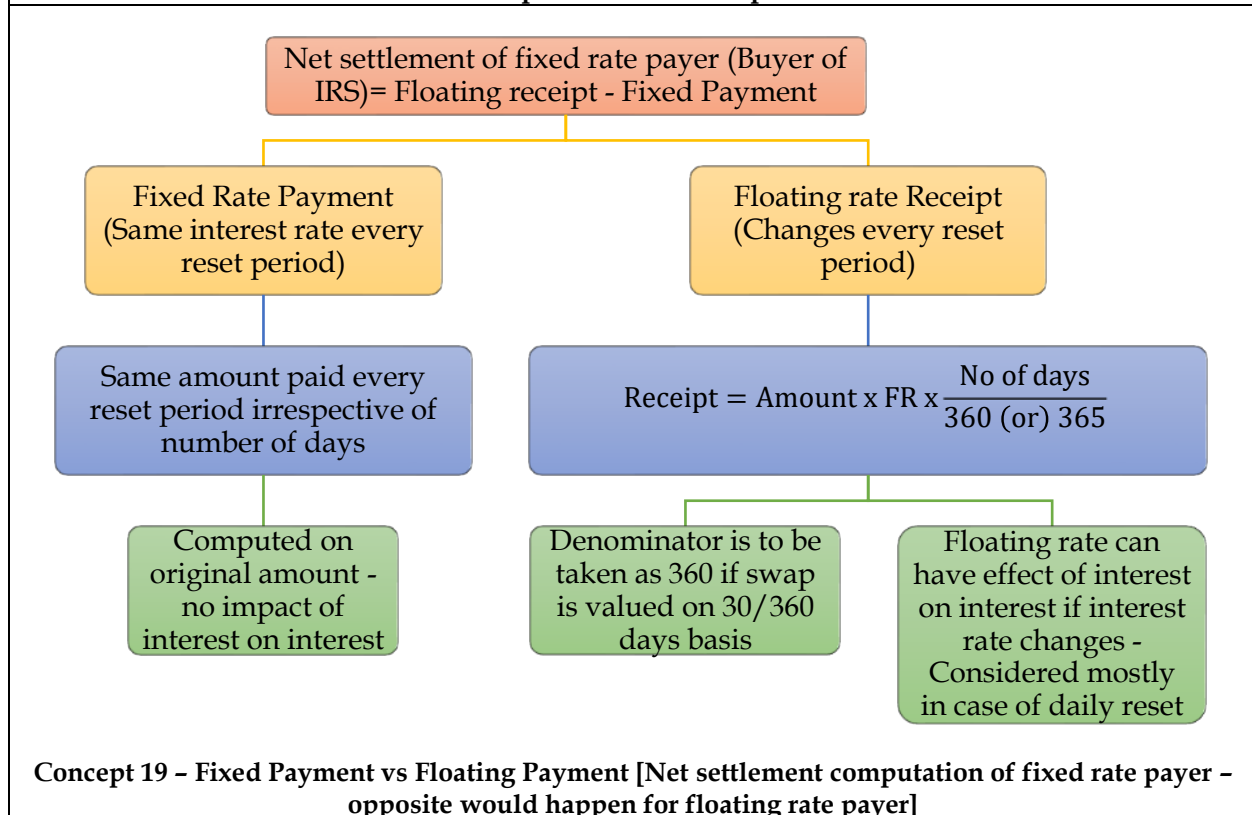
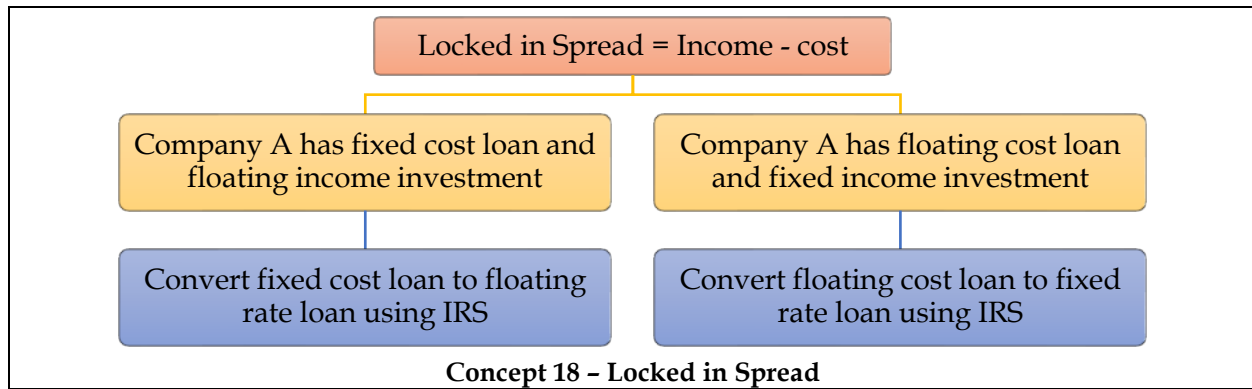
Particulars	Amount
1. Pay to banker as per ideal rate	8%
2. Company 1 Receipt from Company 2 Receive from Company 2 what was paid to Bank	(8%)
3. Company 1 Payment to Company 2 Pay our effective borrowing rate to the other company	T + 0.3%
4. Effective borrowing rate	T + 0.3%

Swap Structuring with intermediary

Particulars	Amount
1. Pay to banker as per ideal rate	8%
2. Company 1 Receipt from swap intermediary Receive from swap intermediary what was paid to Bank	(8%)
3. Company 1 Payment to swap intermediary Pay our effective borrowing rate to swap intermediary	T + 0.3%
4. Effective borrowing rate	T + 0.3%



Concept 17 - Expectation Theory



Chapter 13 – Business Valuation

Economic Value Added= Measure of economic profit

Measures overall company's performance and management effectiveness

Return generation in excess of the cost of capital employed

Concept 1 – Economic Value Added

EVA
Computation =
Item 1 - Item 2

Item 1

EBIT x (1 - Tax)

NOPAT

Item 2

Invested Capital
x WACC

Invested capital =
Capital Employed = It
should be based on
economic value (or)
replacement cost basis

Concept 1 – Economic Value Added

Market Value
Added

Market value of Firm
- Book value of Firm

MV of Firm = MV of equity + MV
of debt + MV of Preference

BV of Firm = BV of equity (SC +
Reserves - Fictitious Assets) + BV
of Debt + BV of Preference

Concept 10 – Market value Added

EVA
Dividend per
share

Excess generation
by the company
and can be enjoyed
by equity
shareholders

Dividend is Paid

No impact on share
price

Dividend not paid

Share price will
increase by EVA
DPS

Concept 5 – EVA Dividend

WACC (Cost of capital) =
Weighted average cost of
different forms of capital

Cost of equity (Mostly
given in question or
computed using Gordon
Model)

Cost of debt

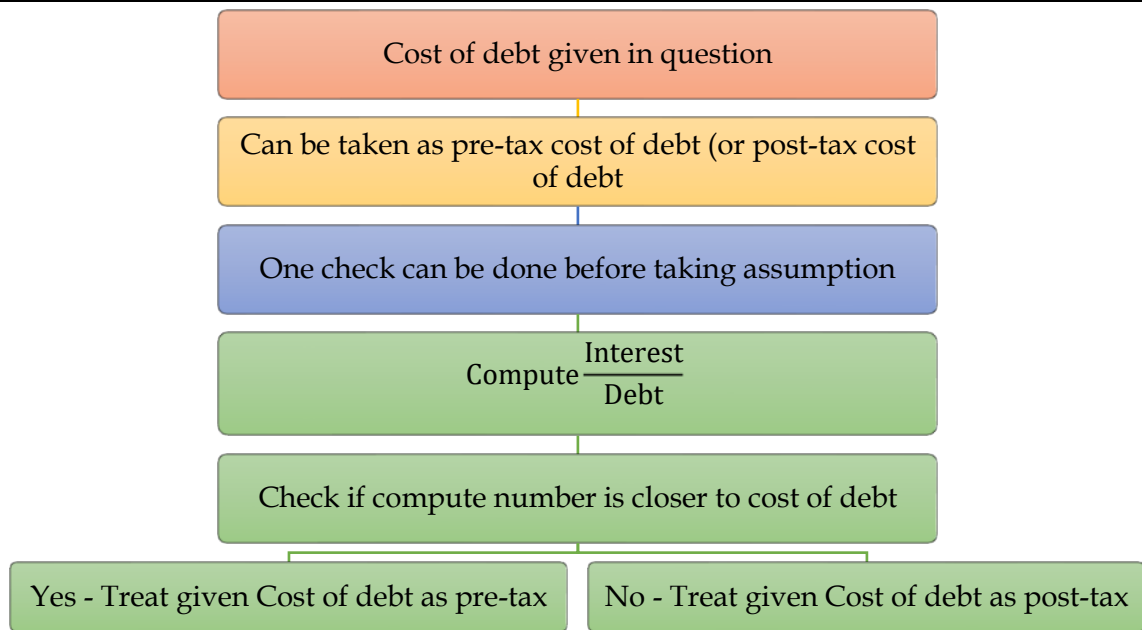
Interest rate x (1 - Tax)

$\frac{\text{Interest} \times (1 - \text{Tax})}{\text{Value of debt}} \times 100$

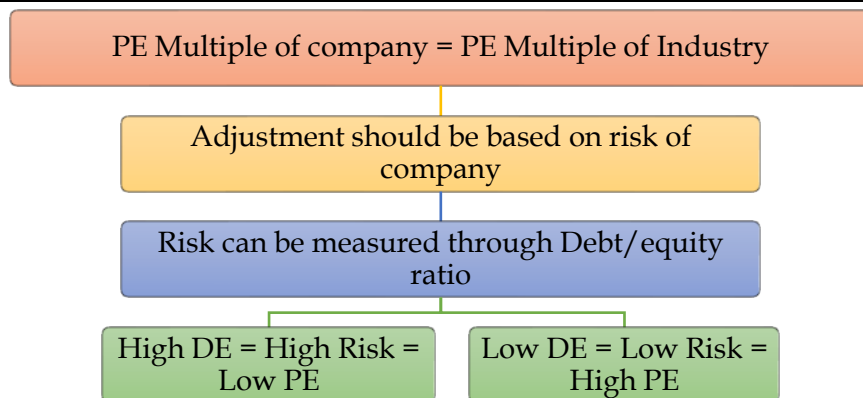
Format:

Source	Cost	Weight	Product
Debt	10%	200	20
Equity	15%	400	60
Total		600	80

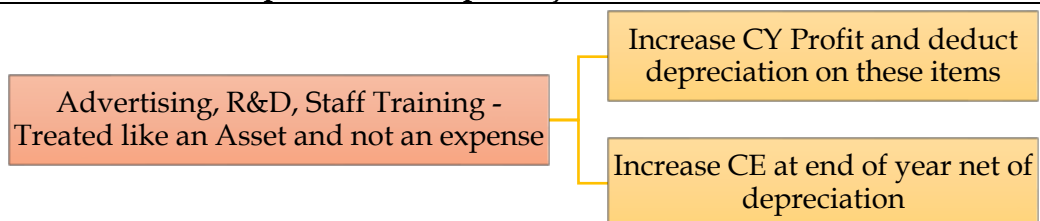
Concept 3 – Format for Computation of WACC



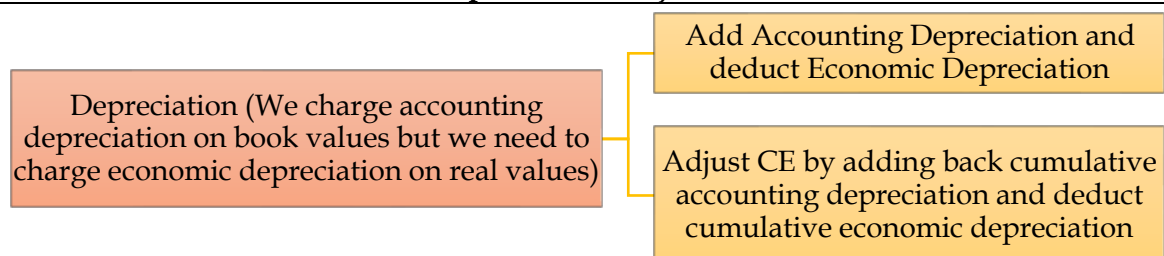
Concept 3 - Format for computation of WACC



Concept 8 - PE Multiple Adjustment based on Risk



Concept 2 - EVA Adjustments



Concept 2 - EVA Adjustments

Non-Cash expenses (Like Provision for Bad and Doubtful Debts)

Add back to Profit

Add Cumulative non-cash expenses to Capital Employed

Concept 2 - EVA Adjustments

Tax Charge

Add back tax provision charged in P&L

Deduct cash taxes paid

Concept 2 - EVA Adjustments

Tax Adjustment on EVA Computation

Cash taxes are deducted in NOPAT - However interest is not subtracted but tax benefit is factored in cash taxes

Three ways of computing NOPAT and giving tax treatment

$EBIT \times (1 - \text{Tax Rate})$

$EBIT - \text{Cash taxes} - \text{tax saving lost on interest}$

$PAT + \text{Interest} (1 - \text{Tax})$

Concept 7 - Tax Adjustment on PE Computation

EBIT Computation using Financial Leverage

$$FL = \frac{EBIT}{EBT - \left(\frac{PD}{1 - \text{Tax}} \right)}$$

Concept 6 - Computation of EBIT using Financial Leverage

EVA = Excess value generated by the company for the shareholders

Value of Firm = Present Capital employed + PV of Future EVA

Concept 9 - Valuation of Firm on basis of EVA

Valuation Approaches

Cash flow based valuation

Relative Approach

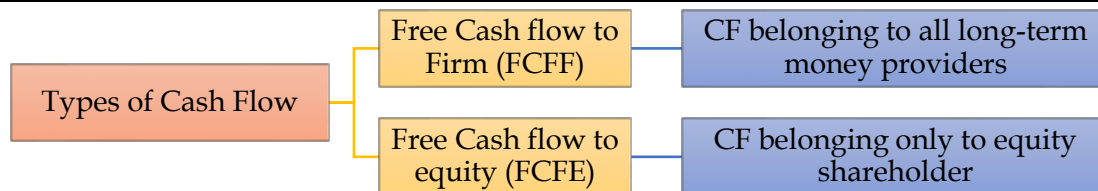
Break-up value Approach

FMP based valuation

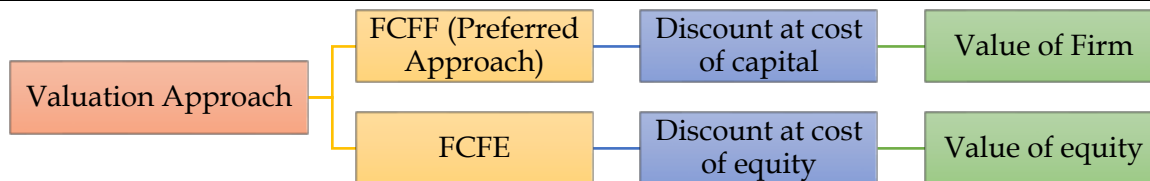
Net assets method

Earnings capitalization method

Valuation Approaches



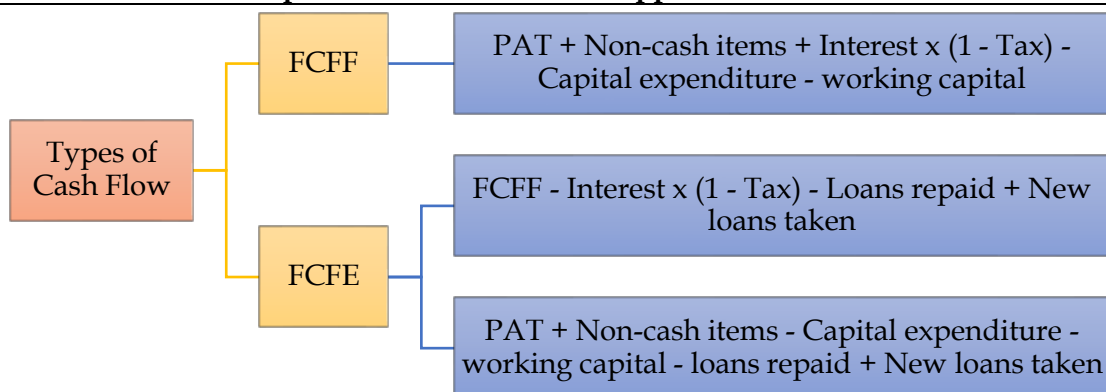
Concept 11 - Cash Flow Based Approach of Valuation



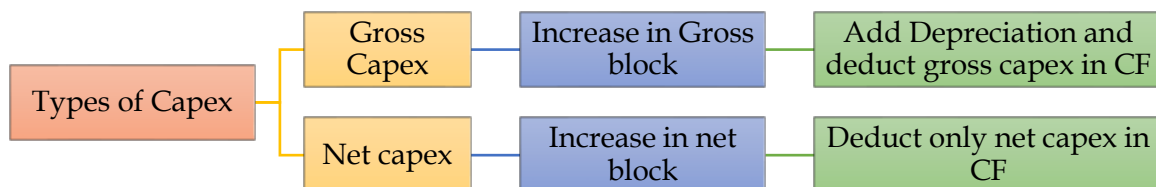
Note:

- Approach 1 is preferred Approach and would give us value of Firm
- Value of equity = Value of Firm - Value of Debt

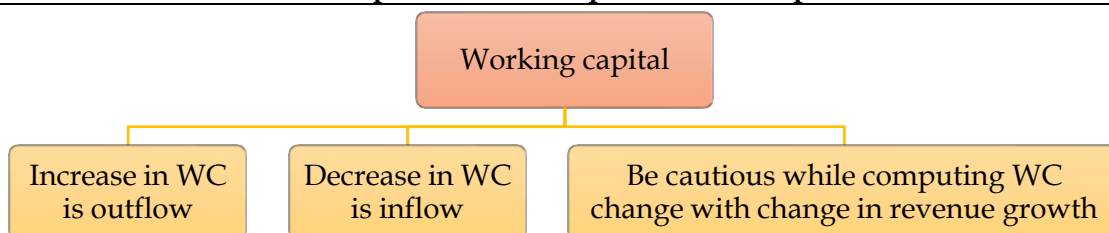
Concept 11 - Cash Flow Based Approach of Valuation



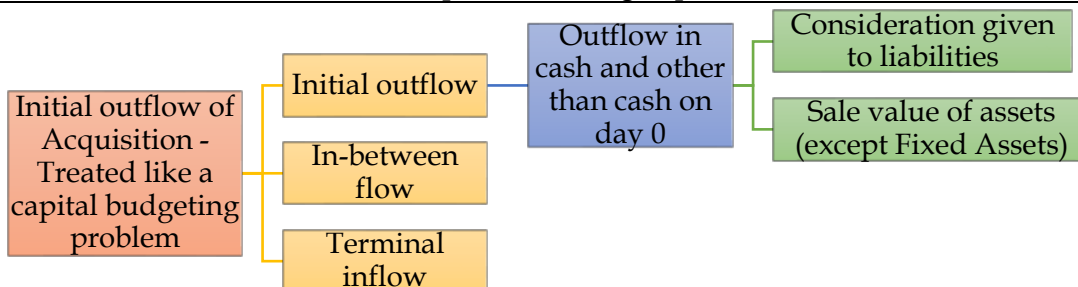
Concept 11 - Cash Flow Based Approach of Valuation



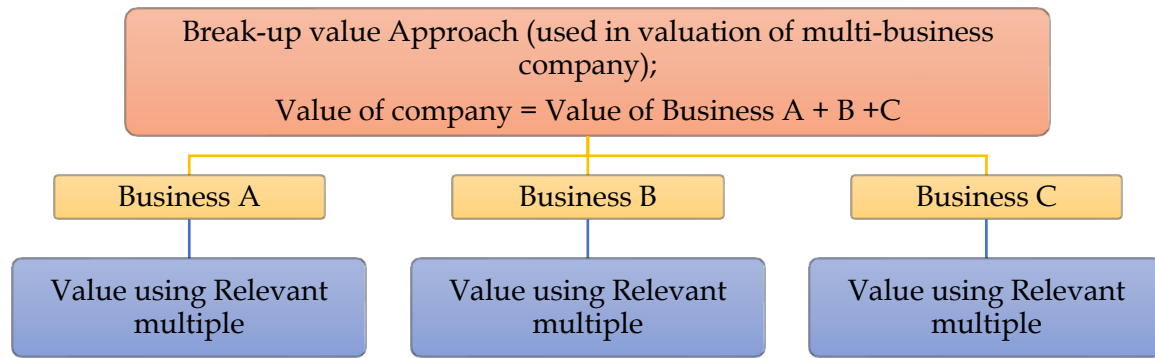
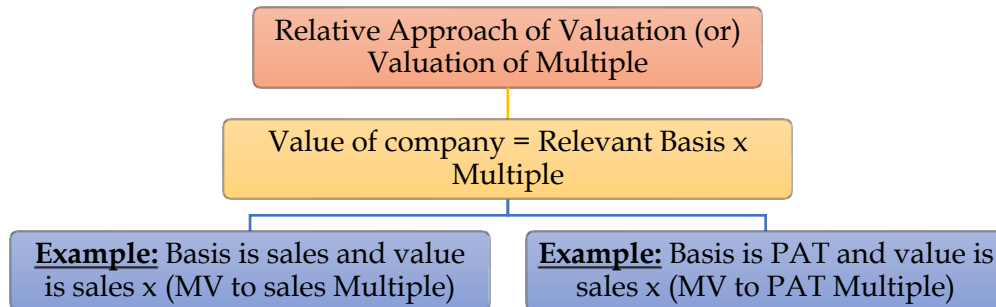
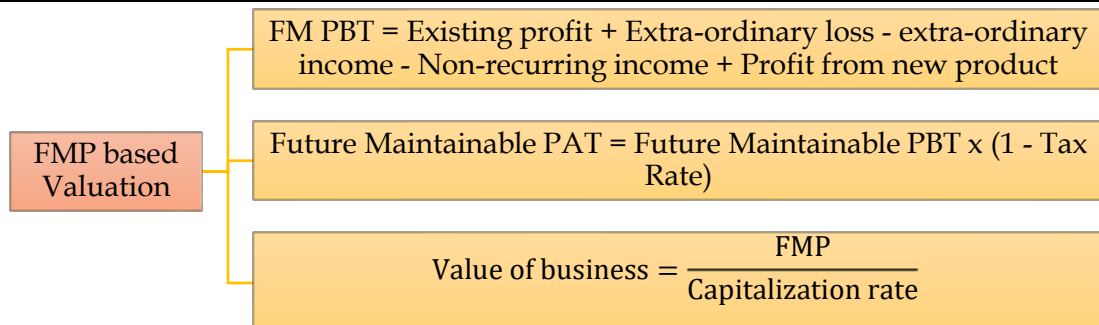
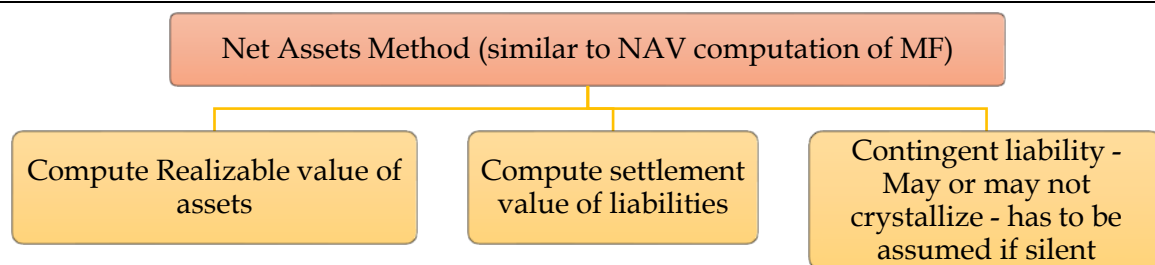
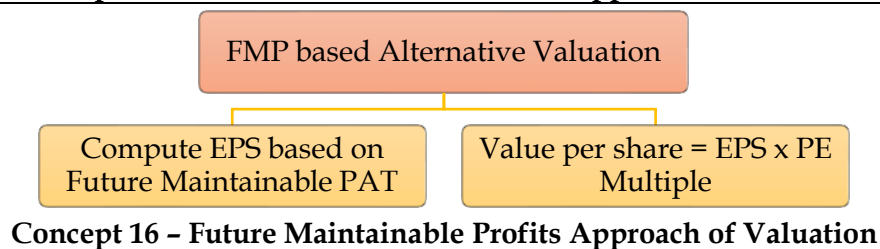
Concept 12 - Gross Capex and Net Capex



Concept 13 - Working Capital

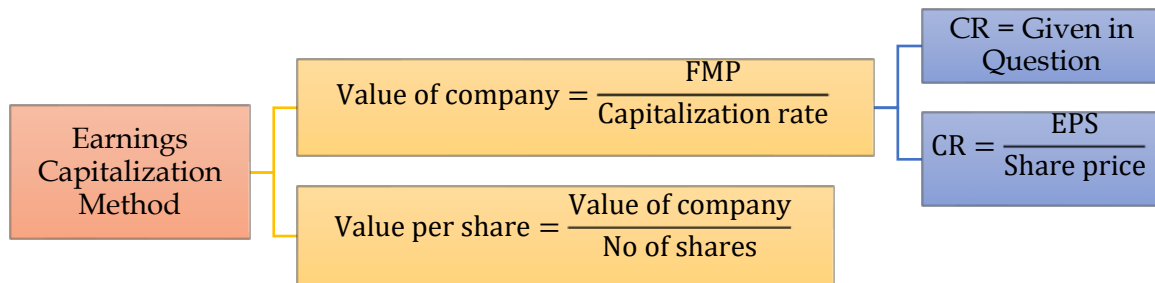
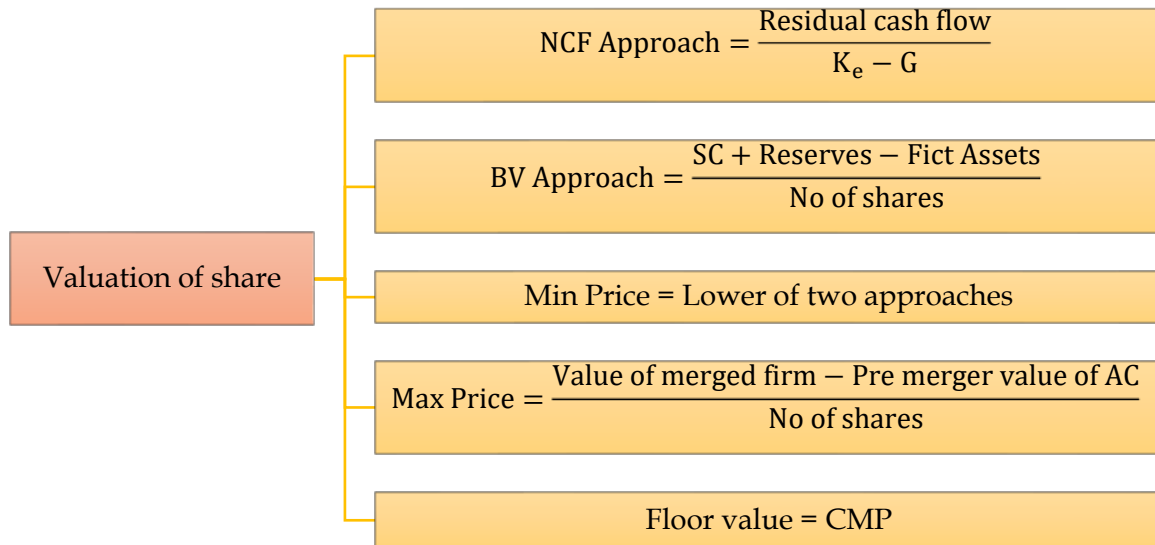
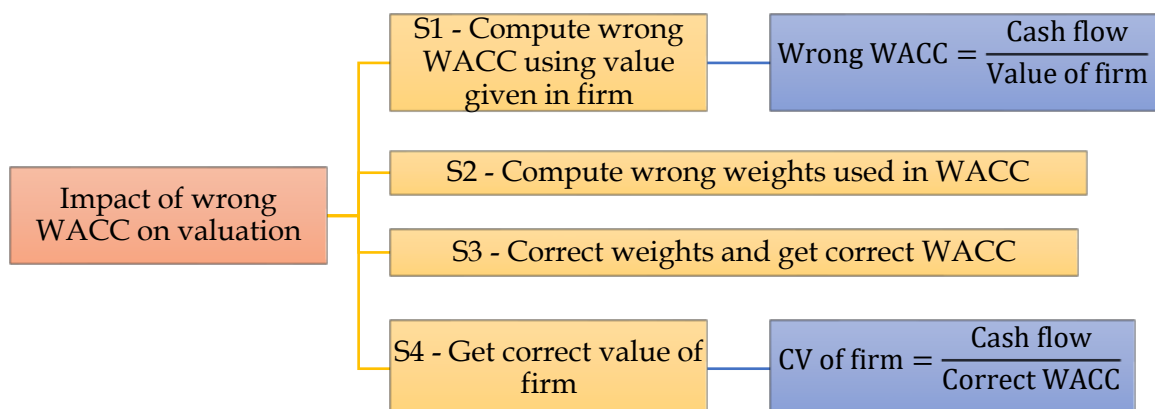
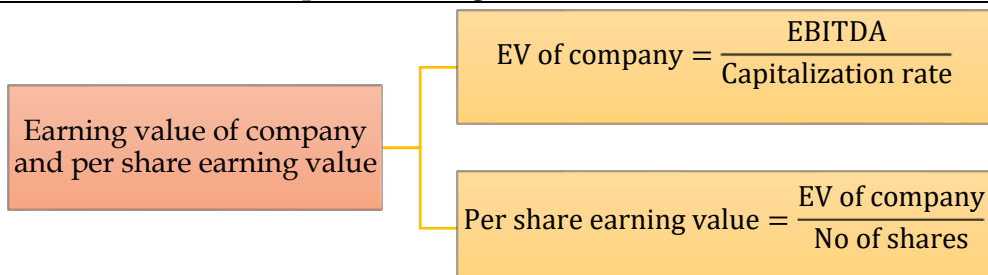


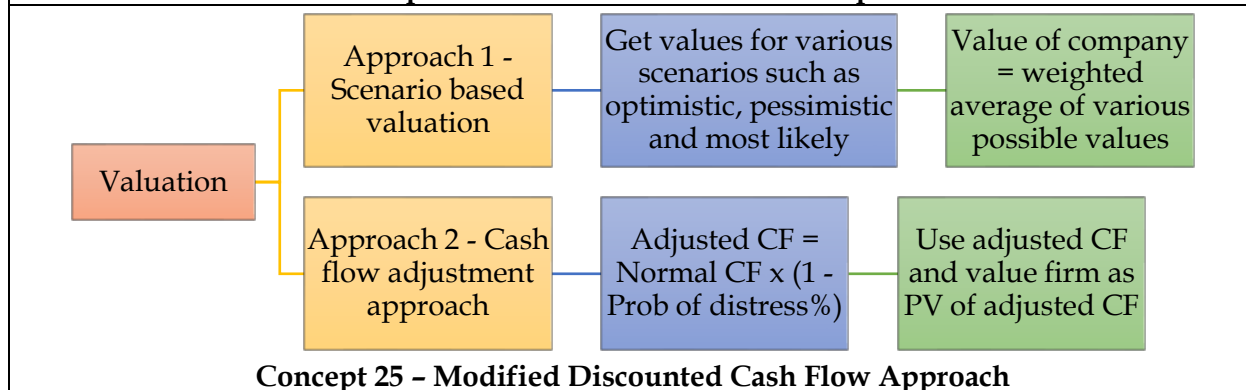
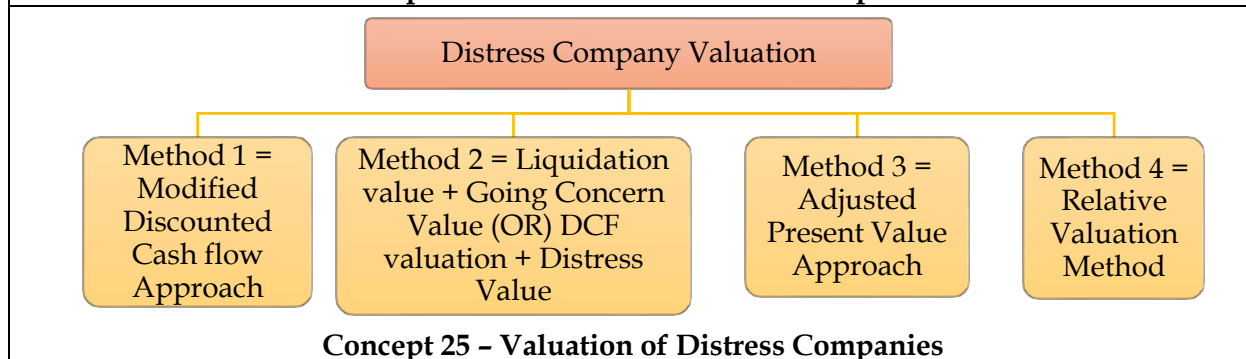
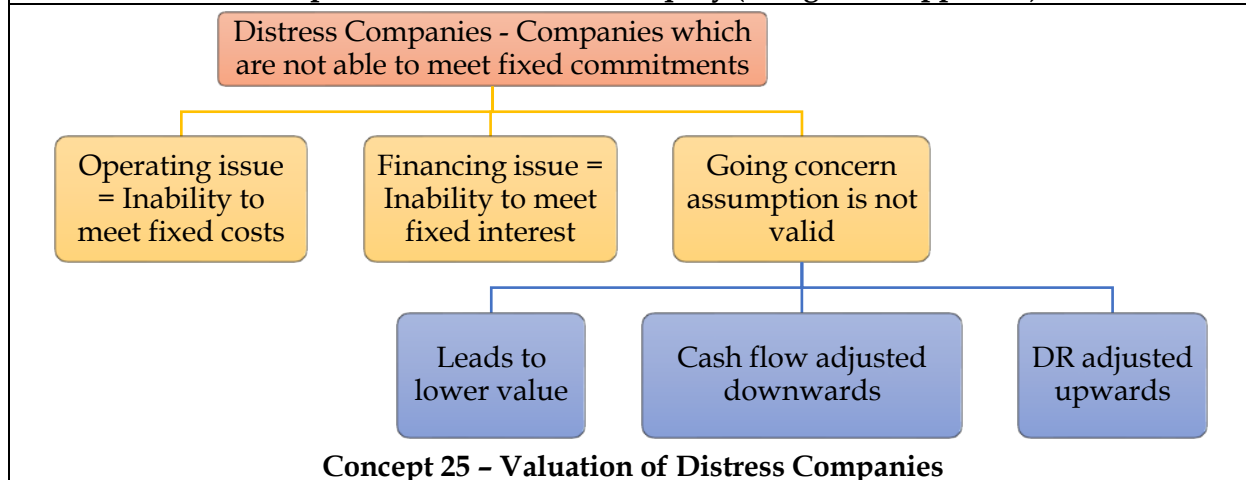
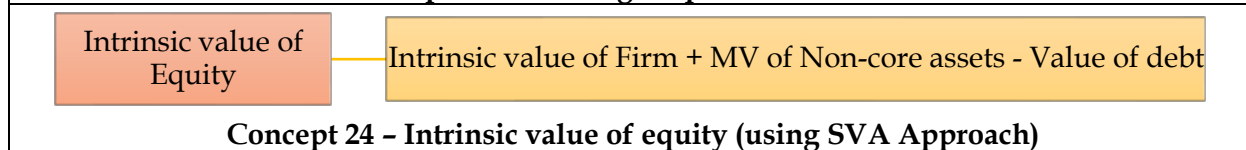
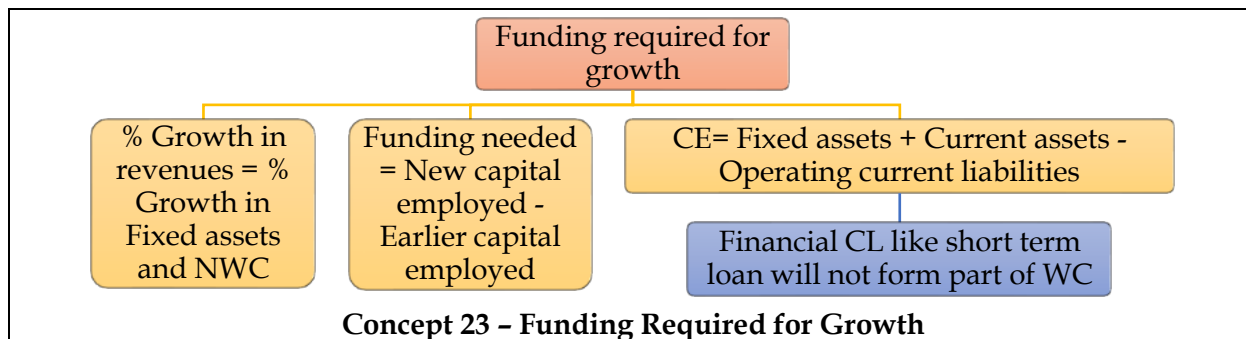
Concept 22 - Initial outflow of Acquisition (Cost of Acquisition)

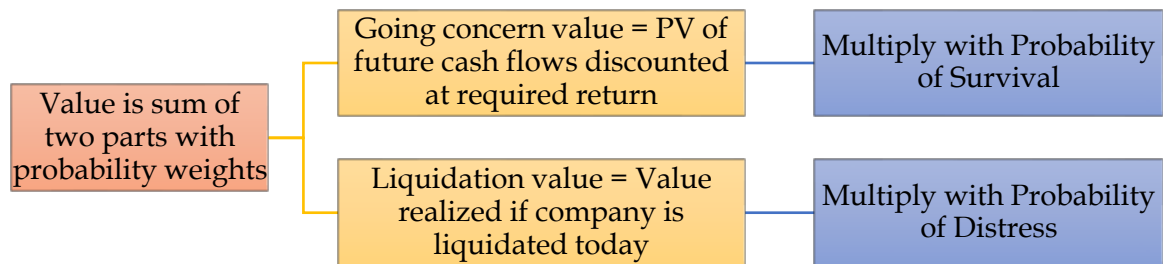
**Concept 15 - Break-up value Approach****Concept 14 - Relative Approach of Valuation****Concept 16 - Future Maintainable Profits Approach of Valuation**

$$\text{Value per share} = \frac{\text{Realizable value of Assets} - \text{Settlement value of Liabilities}}{\text{Number of shares}}$$

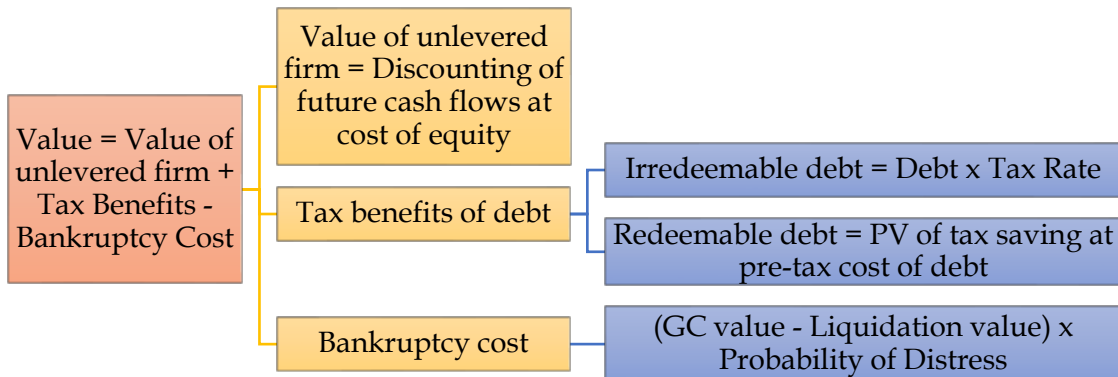
Concept 17 - Net Assets Method

**Concept 17 - Earnings Capitalization Method****Concept 18 - Net Cash Flow and Book Value Approach with Floor Value****Concept 20 - Wrong WACC and Valuation****Concept 21 - Computation of Per share earning value (Not a logical item)**

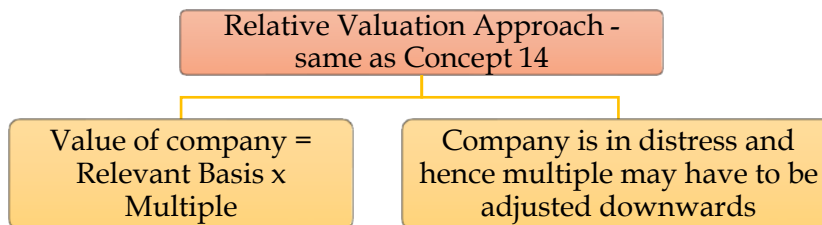




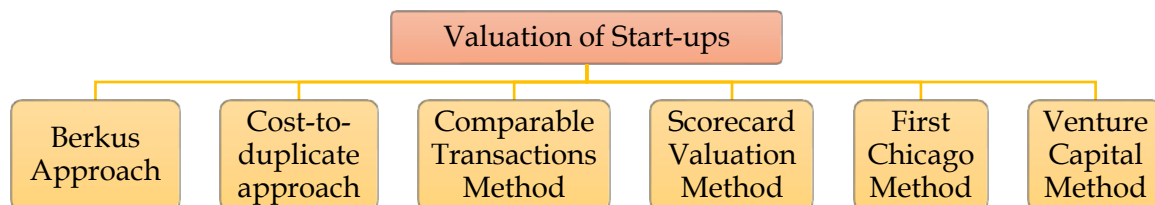
Concept 25 - Liquidation value + Going Concern Value (OR) DCF Valuation + Distress Value



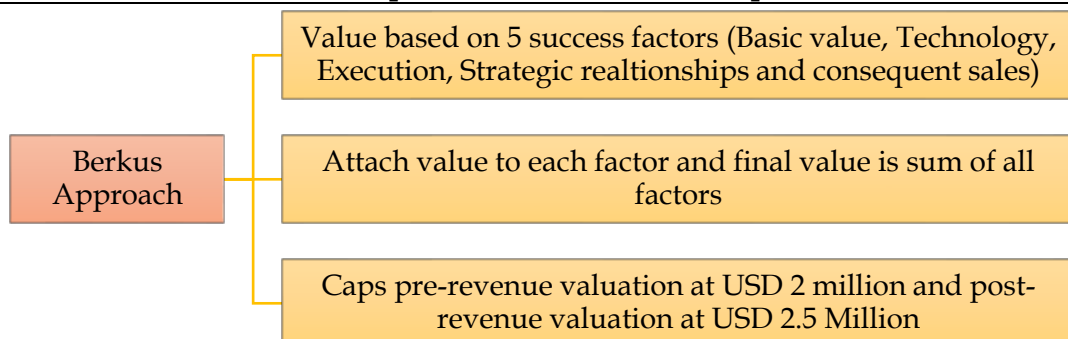
Concept 25 - APV Approach



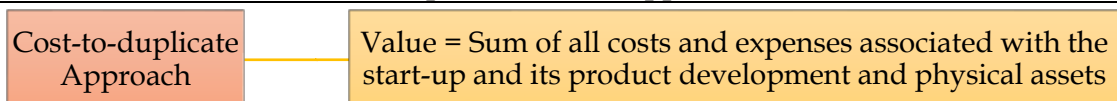
Concept 25 - Relative Valuation Approach



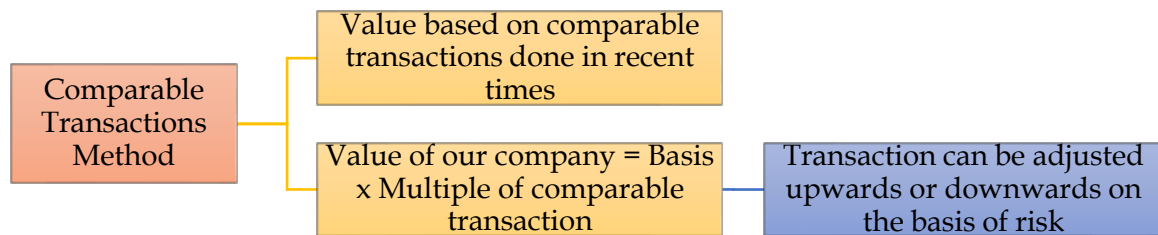
Concept 26 - Valuation of Start-ups



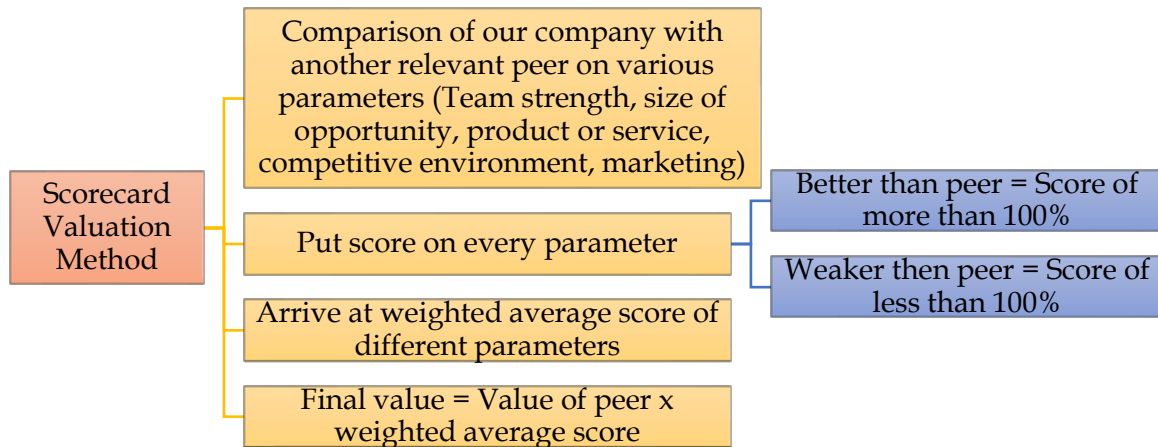
Concept 26 - Berkus Approach



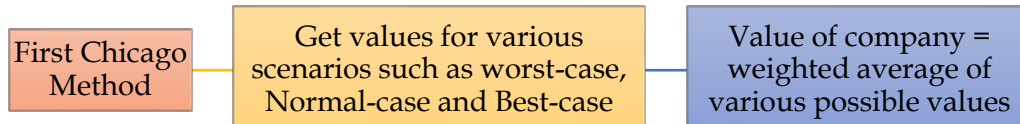
Concept 26 - Cost-to-duplicate Approach



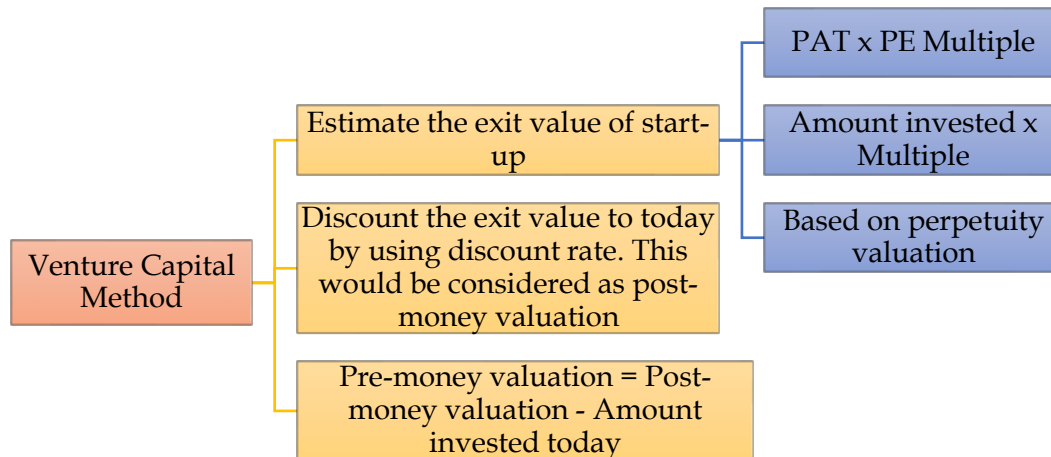
Concept 26 - Comparable Transactions Method



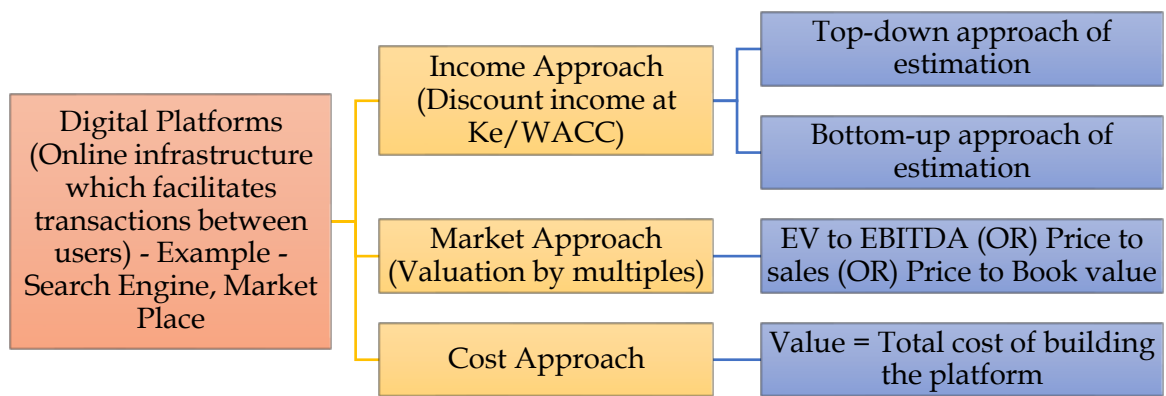
Concept 26 - Scorecard Valuation Method



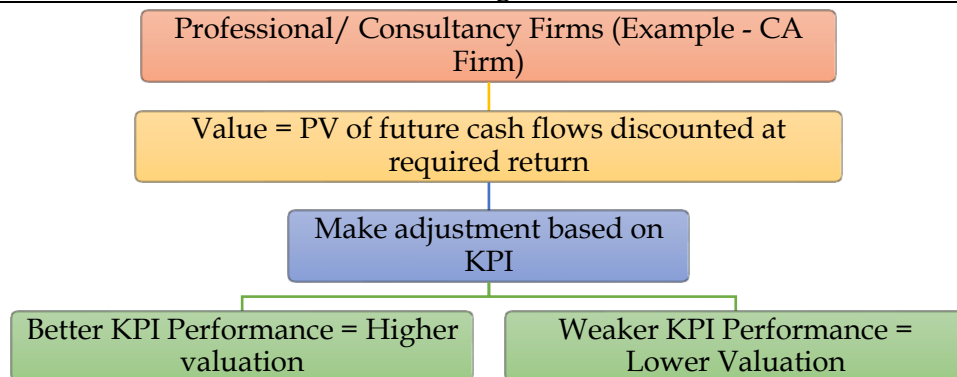
Concept 26 - First Chicago Method



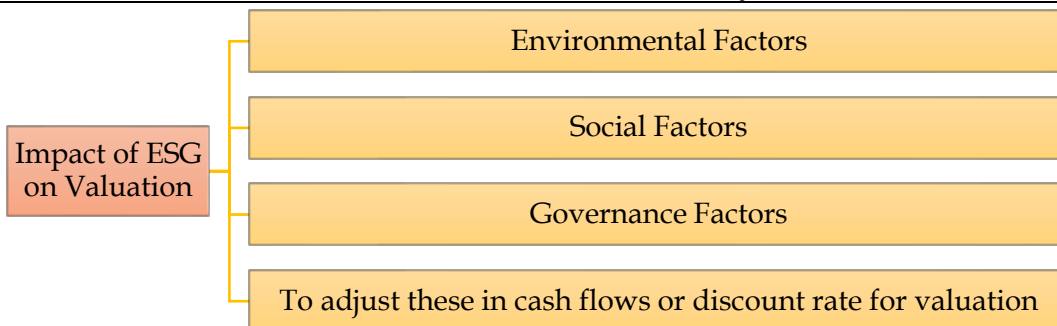
Concept 26 - Venture Capital Method



Valuation of Digital Platforms

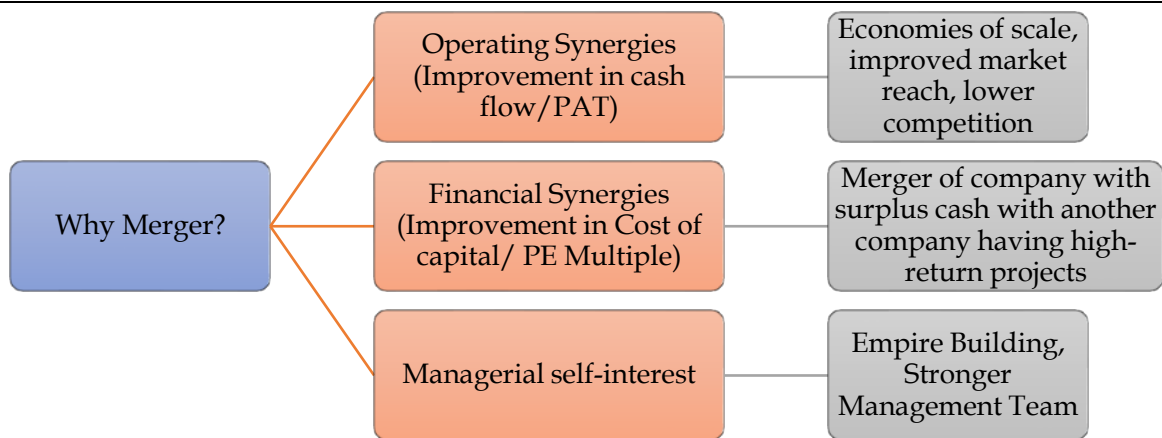


Valuation of Professional/Consultancy Firms



Impact of ESG on Valuation

Chapter 14 – Mergers, Acquisitions & Corporate Restructuring



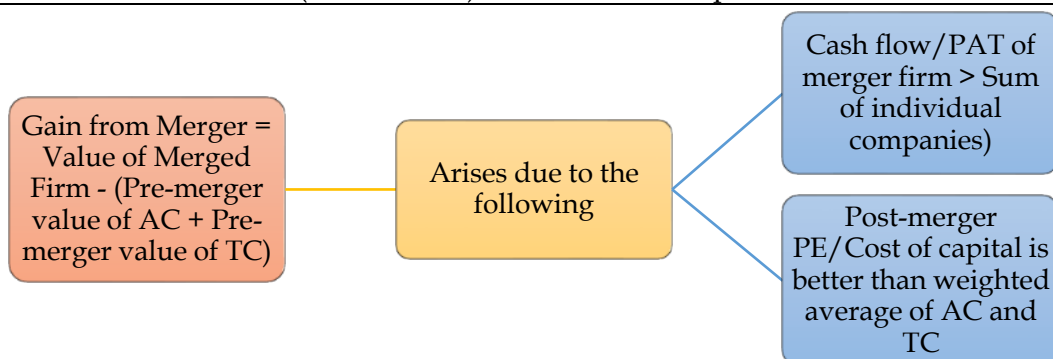
Introduction

Concept 1 – Format for doing Merger Analysis

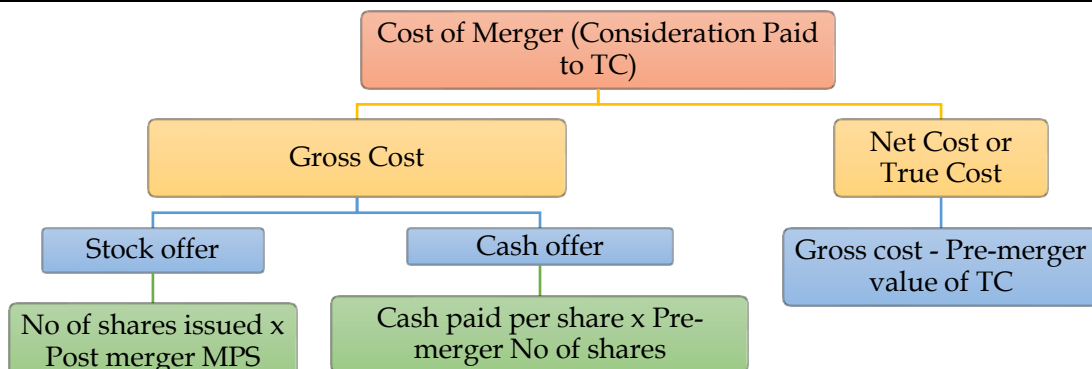
Particulars	AC	TC	Merged company
PAT/EAES	XXX	XXX	XXX
No of equity shares	XXX	XXX	XXX
EPS [PAT/ No of shares]	XXX	XXX	XXX
PE Multiple	XXX	XXX	XXX
MPS [PAT x PE Multiple]	XXX	XXX	XXX
No of equity shares	XXX	XXX	XXX
Market value of firm [MPS x No of shares]	XXX	XXX	XXX

Note:

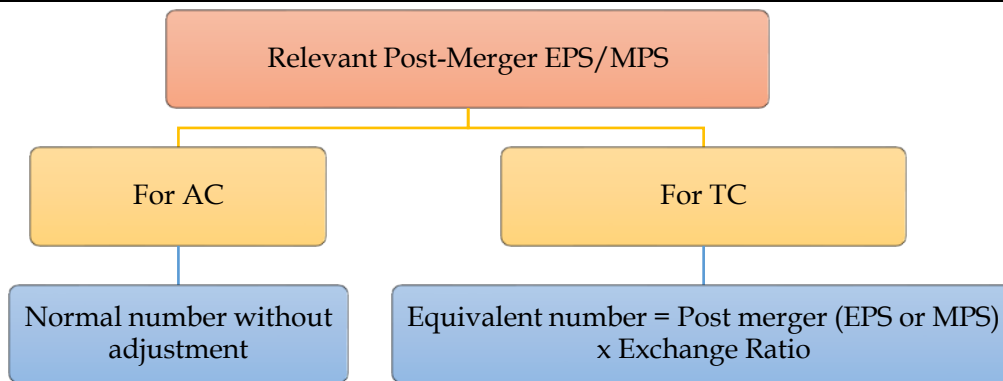
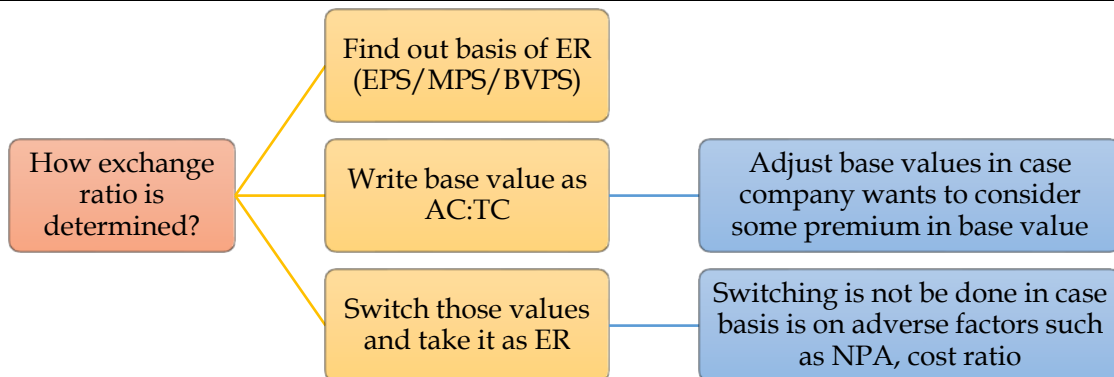
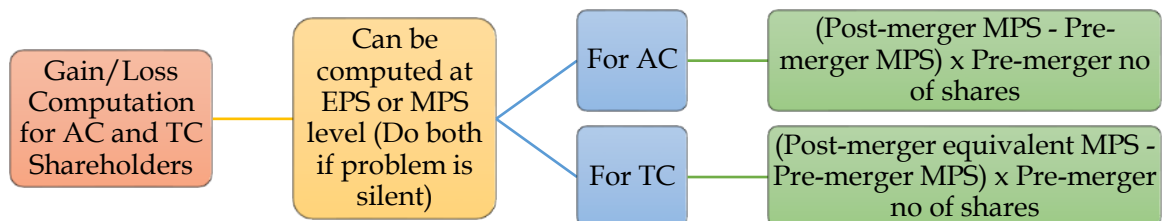
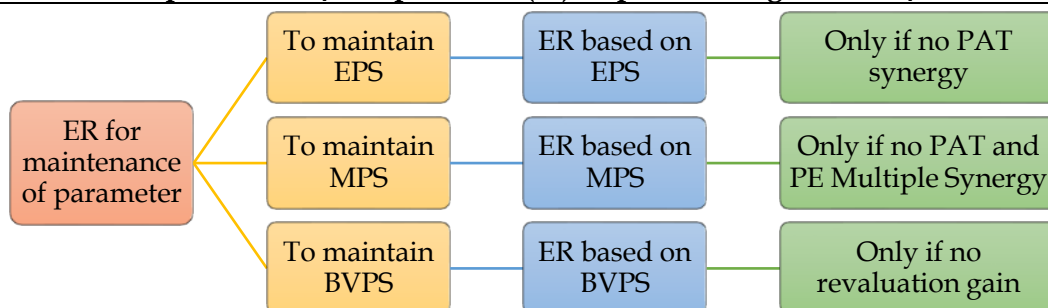
- AC = Acquiring Company; TC = Target Company
- Market value of firm (real formula) = PAT x PE Multiple

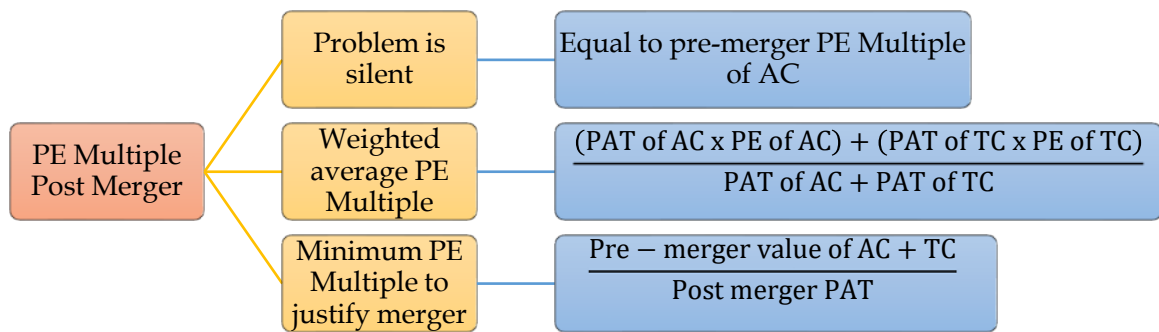


Concept 2 – Gain from Merger

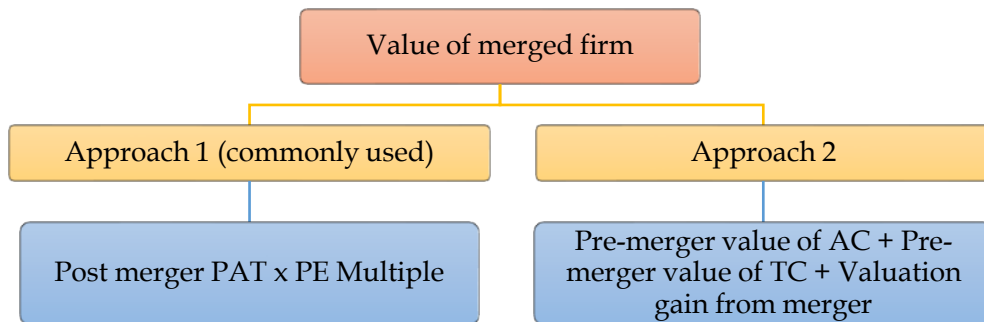


Concept 3 – Cost of Merger

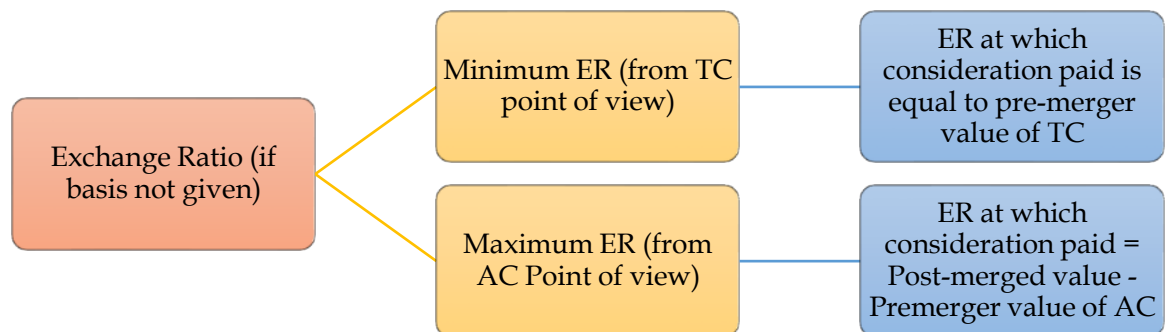
**Concept 9 - Equivalent EPS/MPS****Concept 7 - How Exchange Ratio is Determined?****Concept 10 - Gain/loss per share (or) Impact of merger on EPS/MPS****Concept 11 - ER to maintain EPS/MPS/BVPS**



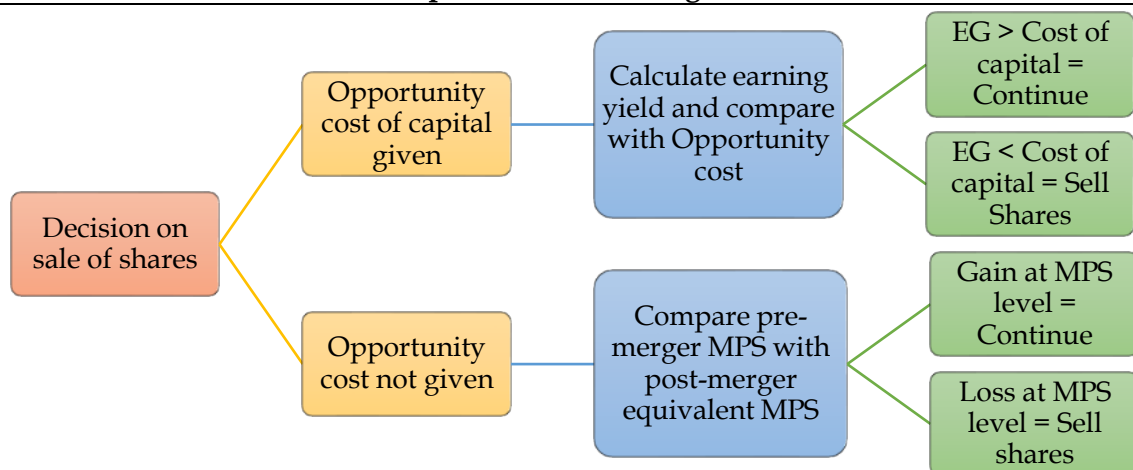
Concept 8 – PE Multiple



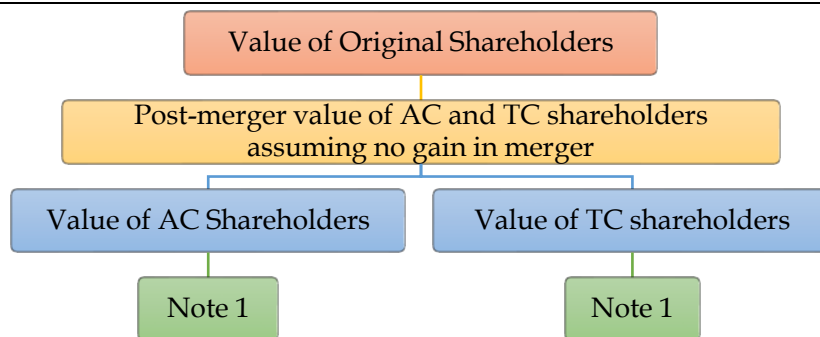
Concept 8 – Value of Merged Firm



Concept 8 – Value of Merged Firm



Concept 27 – Decision on Sale of Shares

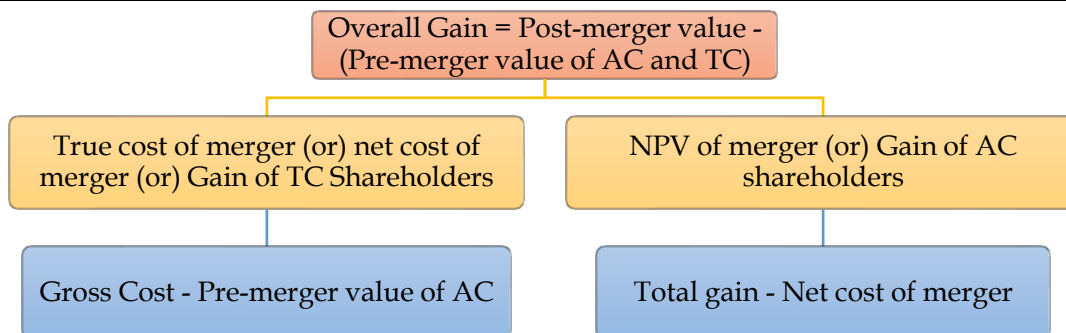


Concept 13 - Value of Original Shareholders

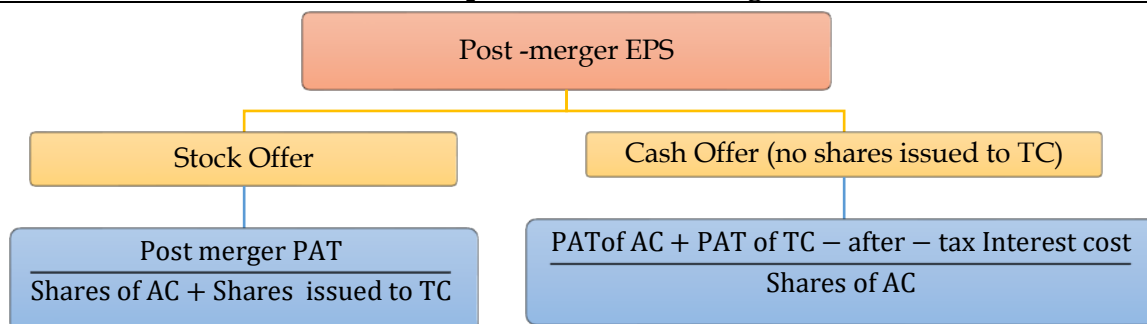
Note 1

Value of AC shareholders = $\left(\frac{\text{Pre merger value of AC + TC}}{\text{Pre merger shares of AC + Shares issued to TC}} \right) \times \text{Shares held by AC shareholders}$

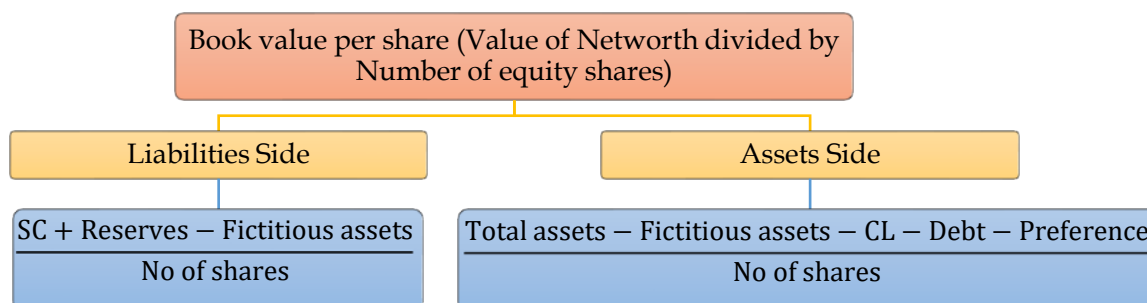
Value of TC shareholders = $\left(\frac{\text{Pre merger value of AC + TC}}{\text{Pre merger shares of AC + Shares issued to TC}} \right) \times \text{Shares issued to TC shareholders}$



Concept 4 - Gain from Merger



Concept 5 and 6 - Post-Merger EPS



Concept 16 - Book value per share

Free Float Market Capitalization (Shareholding by non-promoters (or) Shareholding by Public)

Free-float market capitalization = Overall market capitalization x % shareholding by non-promoters

Concept 14 - Free Float Market Capitalization

Impact of bonus issue/Split

Increase in no of shares and EPS/MPS/BVPS will go down

Overall Market Capitalization will remain same

Concept 17 - Impact of bonus/Split

Impact of Revision in Growth rate of Firm

Value of TC business will increase in case growth rate increases

Compute existing cost of capital as $\frac{\text{Overall Dividends}}{\text{Existing value}} + G$

Compute revised value of business as $\frac{\text{Overall Dividends}}{\text{Existing } K_0 - \text{New } G}$

Concept 19 - Impact of Revision in Growth rate of Firm

Price (EPS x PE Multiple)

EPS (ROE x BVPS)

ROE

BVPS

PE Multiple

Concept 15 - Components of Price

Final ER (Negotiation)

Stronger company is one with better PE, Growth, Brand, Cost of capital, ROE

Closer to lower limit if TC is stronger

Closer to upper limit if AC is stronger

Concept 18 - How is final exchange ratio decided in negotiation

Intrinsic value

Real value of company

Taken as equal to MPS in absence of information

Concept 20 - Intrinsic value

Exchange ratio based on adverse parameters

Adverse parameters are those which an organization wants to minimize such as NPA, Expense Ratio, COGS Ratio

We should take ER as equal to base values and no switching should be done in these cases

Concept 22 - Exchange Ratio based on adverse parameters

Ratios related to Bank Merger

$$\text{GNPA \%} = \frac{\text{GNPA in Rupees}}{\text{Advances}} \times 100$$

$$\text{CAR (\%)} = \frac{\text{Networth}}{\text{Risk Weighted Assets}} \times 100$$

Concept 23 - Ratios related to Bank Merger

Post Merger PAT of Next year

Normal Approach

[(PAT of AC of year 0 + PAT of TC of Year 0) × (1 + Post-merger growth of merged firm)] + Synergy Gain

Retained earnings are already re-invested

[PAT of AC of year 0 + AC Growth Rate] + [PAT of TC of year 0 + TC Growth Rate] + Synergy Gain

Post merger PAT of Year 2 = [Post-merger PAT of year 1] × (1 + Merged company Growth Rate)

Concept 28 - Post-merger PAT if retained earnings have already been re-invested

Promoter shareholding is reduced to comply with SEBI Norms and this is done by giving free shares only to minority shareholders

$$\text{Post bonus Number of shares} = \frac{\text{Shares held by Promoters}}{\text{Desired Promoter shareholding \%}}$$

Number of bonus shares allotted = (Post bonus number of shares) - Existing shares

Bonus ratio = $\frac{\text{New shares allotted to Minority}}{\text{Existing shares held by minority}}$

Concept 25 - Bonus issue to reduce Promoter Holding

Fund available for Merger in case of Cash Consideration

Maximum Debt Post Merger = $\text{Networth} \times \left(\frac{\text{Debt}}{\text{Equity}}\right)$

Maximum New debt = Total debt - Existing debt of AC and TC

Available cash and cash equivalents

Total Fund = Maximum New debt + Cash and cash Equivalents

Concept 30 - Fund Available for Merger

Post merger shareholding

$$\left(\frac{\text{Existing shares in AC} + (\text{Existing shares in TC} \times \text{ER})}{\text{Post - merger overall shares}} \right)$$

Concept 31 - Post-merger shareholding of a shareholding who has shares both in AC and TC

Distribution of shares to TC shareholders in case of partly paid shares

Convert partly paid shares into equivalent fully paid shares

ER = Shares allotted: Total Fully paid shares

Allot shares based on this to fully paid and partly paid shareholders

Concept 29 - Distribution of shares in case of Partly Paid Shares

Valuation of debt and equity of Merged firm

Value of debt of merged firm = Value of debt of AC + Value of debt of TC

Individual debt values is weighted average of various values at different scenarios

Value of equity of merged firm = Value of equity of AC + Value of equity of TC

Individual Equity values is weighted average of various values at different scenarios

Concept 32 - Valuation of Debt and Equity (Not a Logical Item)

$$\text{ROE} = \frac{\text{EAES or PAT}}{\text{Amount of equity}}$$

$$\text{ROE} = \text{NP Margin} \times \text{Asset Turnover} \times \text{Equity Multiplier}$$

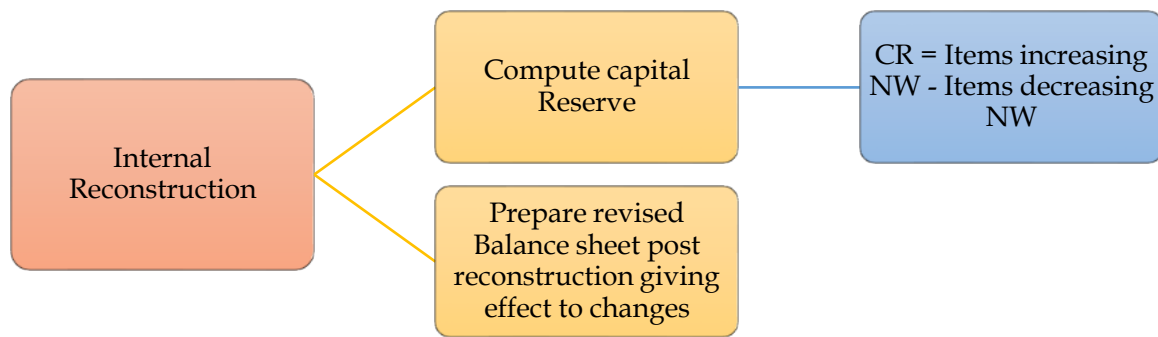
$$\text{NP Margin} = \frac{\text{PAT}}{\text{Sales}}$$

$$\text{Asset Turnover} = \frac{\text{Sales}}{\text{Assets}}$$

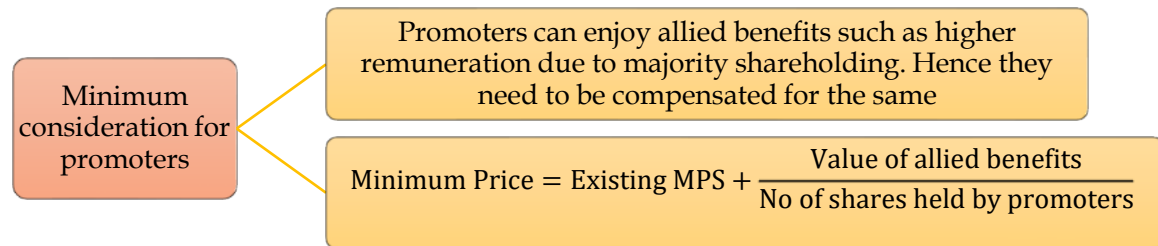
$$\text{Equity Multiplier} = \frac{\text{Assets}}{\text{Equity}}$$

Assets = Debt + Equity if no information

Concept 24 - ROE as per Dupont Framework



Concept 19 of Business Valuation Chapter - Internal Reconstruction



Concept 26 - Minimum Consideration for promoters to relinquish Promoter Holding