INVESTMENT APPRAISAL

Investment decisions can be –

1. **Long term** – Time value of money need to be calculated – Based on cash flows – More risky
2. **Short term** – Affects business for short term (Opposite to long term)

For taking long term decisions **PASIR** is required –

P Planning – It is basically preliminary screening of all the project options available to the organisation (based on the MISSION VISION of company in order to take better long term decisions)

A Analysis – It involves Analysis of shortlisted options (written in detail after this)

S Selection – Then we need to select **1** after the analysis of few options

I Implementation – Then we need to implement/start the project and ensure that **time overrun** & **cost overrun** should be avoided

R Review – After completion of the project, we need to review what all things we did good & what all not so good in order to take better future decisions (by changing the bad decisions taken this time)

There are 4 types of analysis which are required to take – **Qualitative**

1. **FINANCIAL ANALYSIS –** how much investment required – how much cash flow will be there every year etc
2. **TECHNICAL ANALYSIS –** whether the project is technically feasible etc
3. **MARKETING ANALYSIS –** related to marketing, pricing, demand etc
4. **ECONOMIC ANALYSIS –** related to about how beneficial can the project be to the society (in order to get support from govt.) etc

BASIC INVESTMENT APPRAISAL –

1. ***ACCOUNTING RATE OF RETURN (ARR)*** **–** Based on profit (unlike all other methods) – It is basically return on capital employed or what return are we getting on our investment
   ******Always deduct depreciation** when cash flows are given in questions (as it is based on profits not cash flows)

   Even the **difference** between **salvage value** & **initial investment** is depreciation
   Formula – $\frac{\text{Average Profit before interest \& Tax}}{\text{Average Investment}} * 100$
   Disadvantage – It uses profit which can be **manipulated** and is **not actual income**
   Advantage – As share price and all the shareholders are all affected by the profit of the company and even director's remuneration depends on profit, This method is based on profit
2. ***PAY BACK PERIOD (PBP)*** **–** Based on Cash Flow – It is basically when will we get back our investment amount
   *Formula – (***In case of uniform return**)
   Initial Investment/Uniform Return
   Disadvantage – It does not take into account **time value of money**
   Advantage – It tells about how much risk is there (in how much time will we get back our investment amount as in more time – it is more risky and vice versa)

CASH FLOW

Cash outflow/investment not only includes cash paid but also **OPPORTUNITY COST (for eg using the laptop for new project instead of selling it which we were not using earlier)

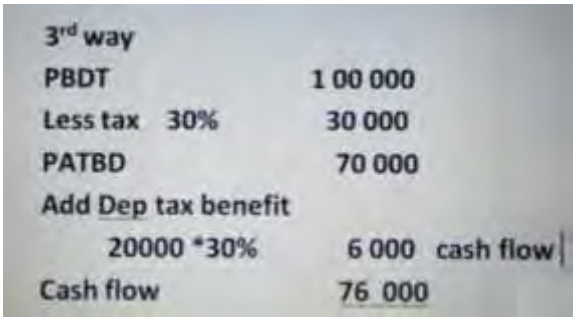
INCREMENTAL INVESTMENT – For the new project, what extra investments are we doing – Cash Flow (Purchase of new assets) – Opportunity cost of existing assets.

In Future Cash Flow calculations, we do not include following costs –

1. **SUNK/PAST COSTS**
2. **COMMITED COSTS** (as they will remain same even if we don't take up the project)
3. **ALLOCATED/ABSORBED/FIXED OVERHEADS**
4. **DEPRECIATION** is not relevant BUTTT ***TAX BENEFIT DUE TO DEPRECIATION*** will be included
5. **OPPORTUNITY COST** is included in Cash Flow Calculations

There are 3 ways for calculating the cash flows including tax benefit due to depreciation pg 6 (FM Class slides 2021.docx)

Writing 3rd way –



3rd way		
PBDT	1 00 000	
Less tax 30%	30 000	
PATBD	70 000	
Add Dep tax benefit		
20000 *30%	6 000	cash flow
Cash flow	76 000	

Suppose instead of taking depreciation 25000, we take 20000 like in above case then simply we will add tax benefit due to depreciation –

76000 + (25000 – 20000)*30% = 77500

*****Generally, taxes are paid in **arrears** (in next year) but if question is silent, we will pay tax in current year only.

Pg 9 & 10 for balancing allowance & charge and below explanation


FM Class slides 2021.docx

Pg 53, q94,95,96 (-fm-BPP examkit-2019-20.pdf)

**We will not pay tax till our loss amount is adjusted (i.e. till the time we do not get profit of same amount of which we incurred loss earlier) for eg if we incurred loss of 100 in 1st year and profit of 80 in 2nd year and again profit of 200 in 3rd year then we will pay tax only after the adjustment of loss (-100+80+20) i.e. on 180

***If other incomes are not there then we will carry forward our loss (till it is not adjusted like in above case) but if we have other incomes from the same project, then we will get the tax benefit in the same year only (pg 11)

**If the question is silent about other incomes, we will assume that there are no other incomes

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SIDE AFFECTS – Because of new project, whatever will be the affect on existing income (positive or negative both) will be treated as cash flow of NEW PROJECT only.

For eg – reduction in number of students in existing course if sir launches a new course (cash OUTFLOW)

Increase in number of students in existing course if sir launches a complementary new course like personal development (INFLOW)

WORKING CAPITAL will also be treated as an **INVESTMENT** as it will be invested in a project for its life like that of FA (for eg if we purchased inventory of 1 lakh and got credit of 80k only then, 20k will be working capital and we will get it after completion of project)

Total initial outflow = **WC + FA**

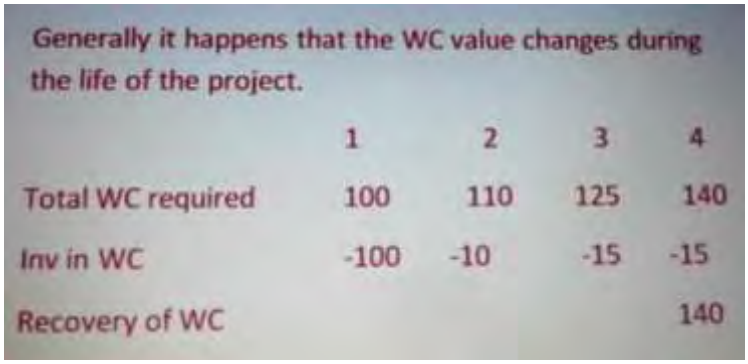
OR

EQUITY + LONG TERM DEBTS

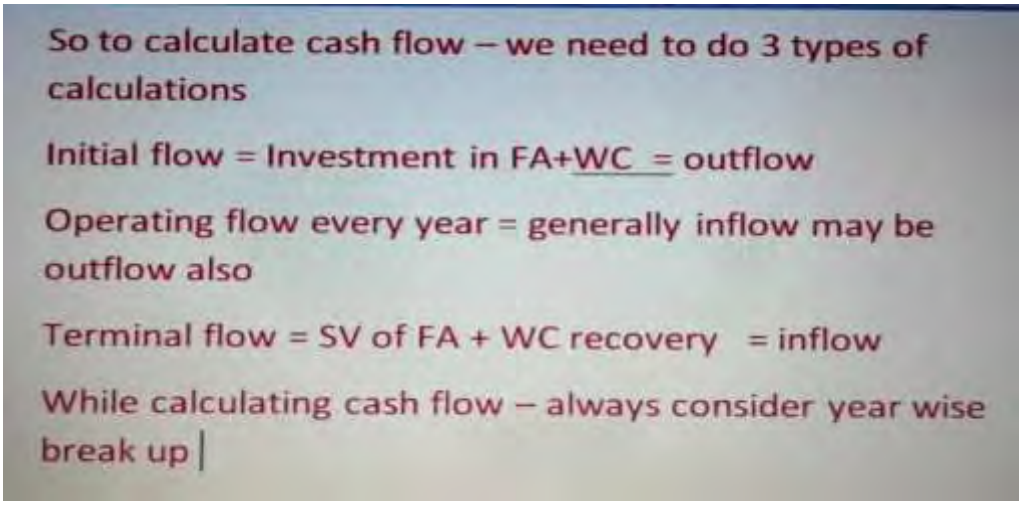
Terminal Inflow = ***Salvage* value of FA + *Recovery* of WC**

***Problem remaining silent, assume *SALVAGE VALUE* of FA *0*, *Recovery* of WC to be *FULLY REALISED*

*****Working Capital changes with increase in time of project as demand of the products/services will be increasing day by day and hence more WC will be required to be invested.


Generally it happens that the WC value changes during the life of the project.

	1	2	3	4
Total WC required	100	110	125	140
Inv in WC	-100	-10	-15	-15
Recovery of WC				140


So to calculate cash flow – we need to do 3 types of calculations

Initial flow = Investment in FA+WC = outflow

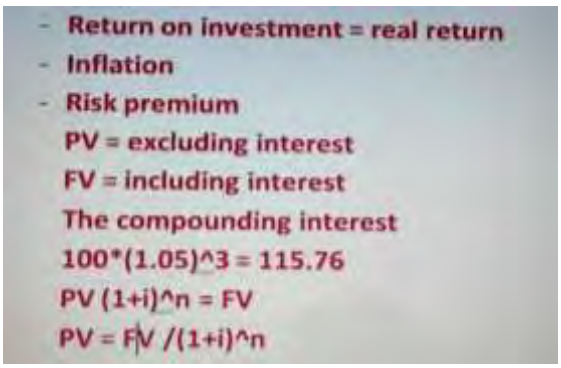
Operating flow every year = generally inflow may be outflow also

Terminal flow = SV of FA + WC recovery = inflow

While calculating cash flow – always consider year wise break up

If it is written that investment/outflow is done in the BEGINNING OF 3RD YEAR, It will be treated as being occurred in 2ND YEAR LAST.

****While calculating cash flows, **INTEREST ON MONEY** will **NOT BE DEDUCTED** as it is already included while calculating PV.


- Return on investment = real return
- Inflation
- Risk premium

PV = excluding interest
FV = including interest
The compounding interest
100*(1.05)^3 = 115.76
PV (1+i)^n = FV
PV = FV /(1+i)^n

Why is there time value of money, first 3