Class: II B.Com. A & B (2019 Only)

SUBJECT: FINANCIAL MANAGEMENT (19COU10)

FINANCIAL MANAGEMENT
UNIT – I

- Introduction to Financial Management

- Meaning and Definition

- Objectives

INTRODUCTION TO FINANCIAL MANAGEMENT

➢ Finance is the lifeline of any business. However, finances, like most other resources, are always limited. On the other hand, wants are always unlimited. Therefore, it is important for a business to manage its finances efficiently. As an introduction to financial management, in this article, we will look at the nature, scope, and significance of financial management, along with financial decisions and planning.
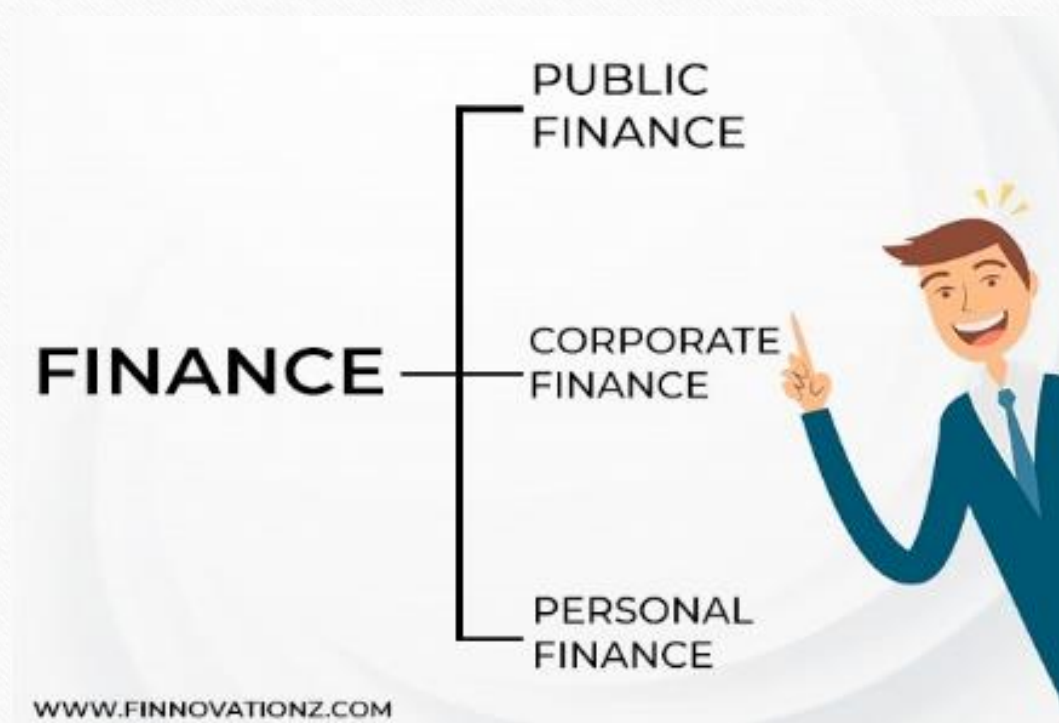

3

Meaning and Definition

- **Business**

An organisation or economic system where goods and services are exchanged for one another or for money

- **Finance**

Finance is define as provision of money at the time when its required.

4

Types of Finance

- For Government

- For Individual

- For Business

Financial Management Meaning

- Financial Management means **planning, organizing, directing** and **controlling the financial activities** such as procurement and utilization of funds of the enterprise.

HICAS

Definition of Financial Management

- According to S. C. KUCHHAL : Financial Management deals with procurement of funds and their effective utilisation in the business

- According to Solomon : Financial Management is concerned with the efficient use of an important economic resource, namely capital funds.

Objectives of Financial Management

OBJECTIVES

Profit Maximization

Wealth Maximisation

Other Objectives
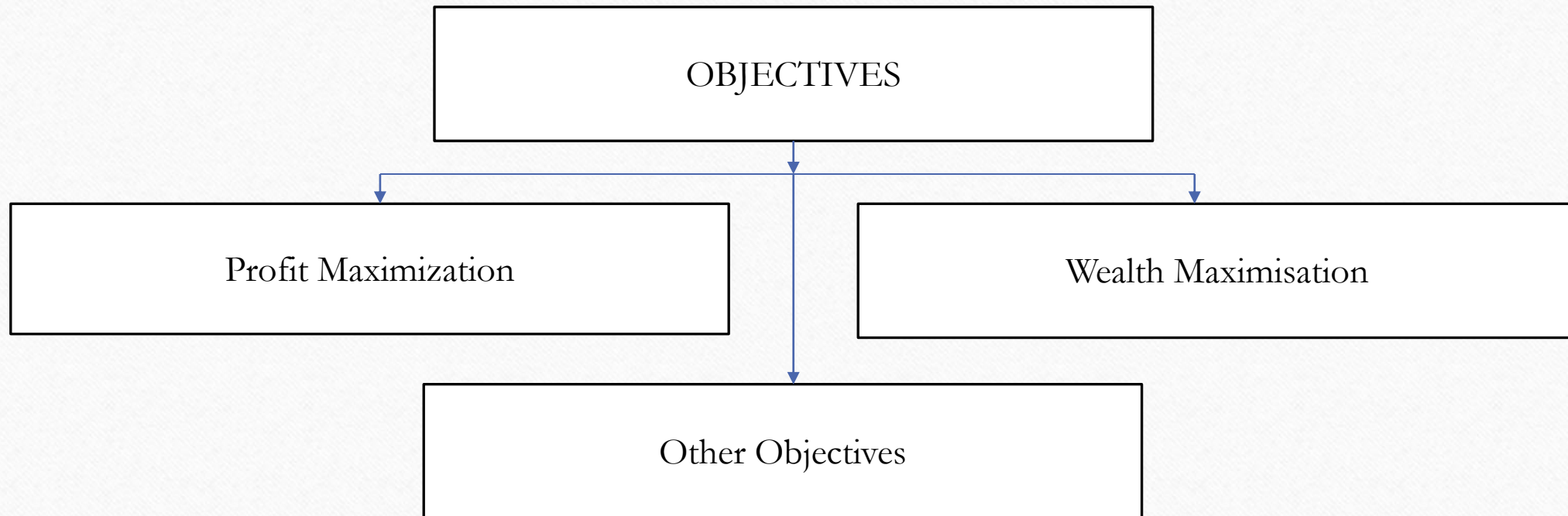
Profit Maximization

- This objectives is highlight decision –dividend – Investment
- Finance Manager Concentrate on

  Efficient Allocation

  Utilisation of Scare

  Rate of Return on Capital employed

- Profit maximization improves hard work
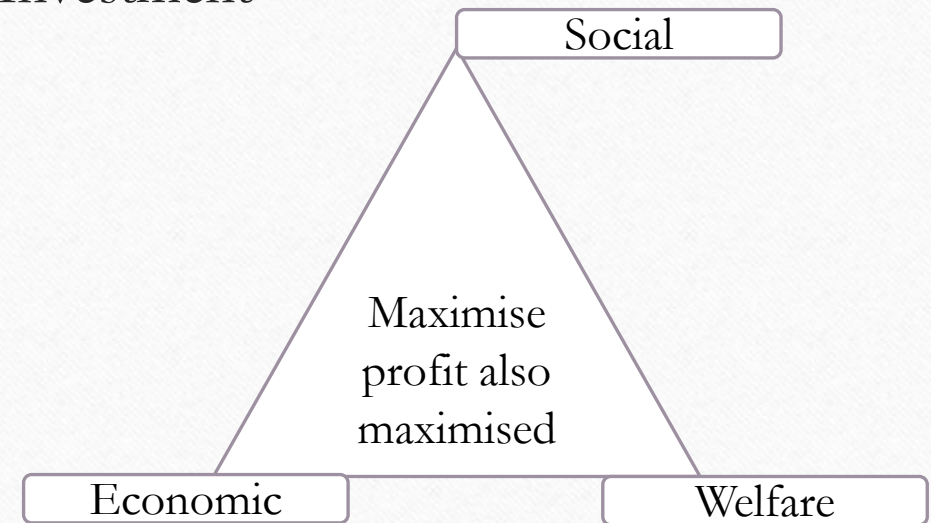
Criticized

Ambiguity

Criticized

Risk

Time Value of Money

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FINANCIAL MANAGEMENT
UNIT – I

▶ Position and Role of Finance Manager

▶ Methods and tools of Finance Manager

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Position and Role of Finance Manager

Head of finance department

Line Manager

Finance Manager are Multiple

Accountable to top Management
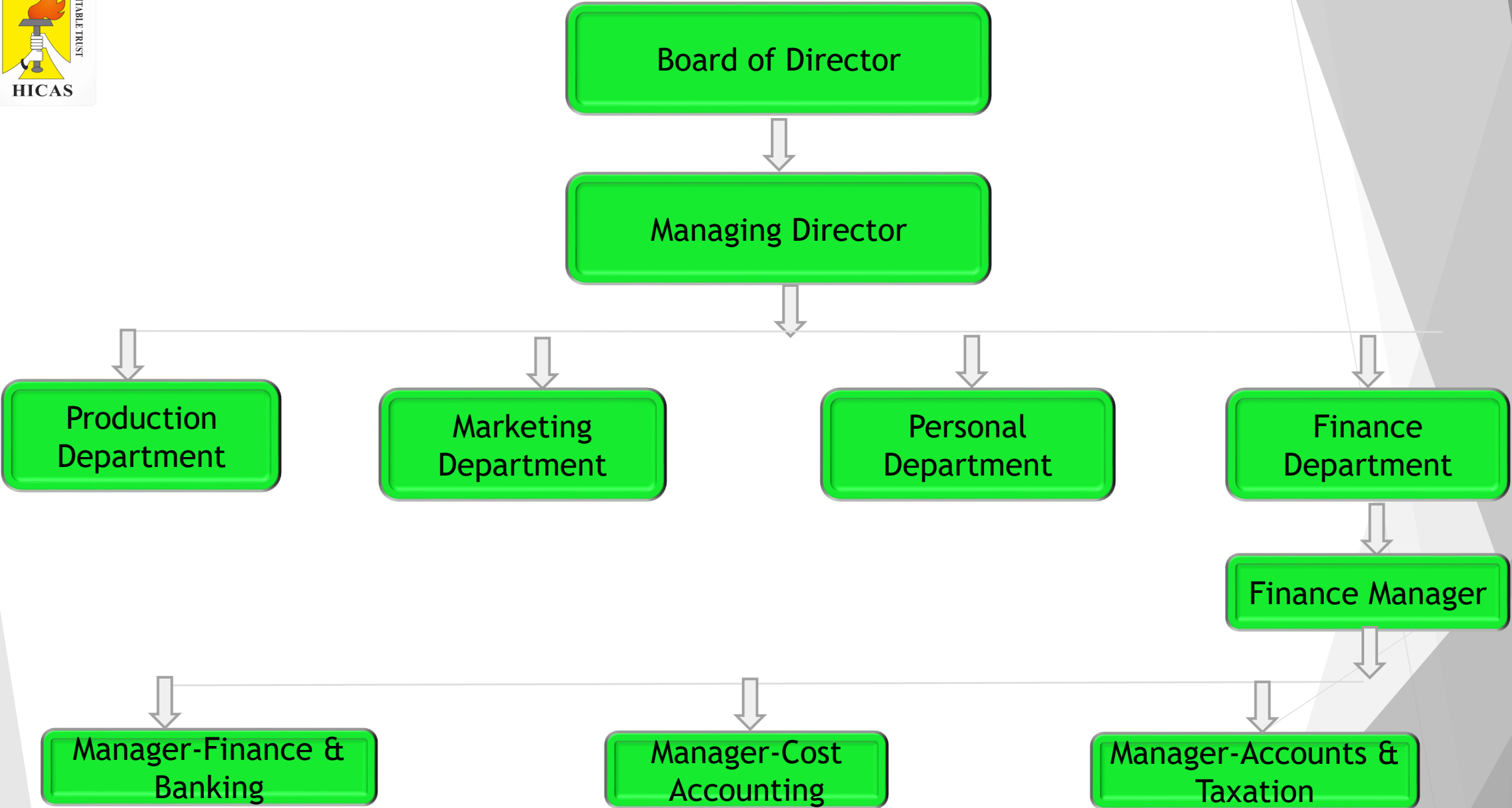
Role of Finance Manager

Forecasting of Financial Requirements

Financing Decision

Investment Decision

Dividend Decision

Deciding overall objectives

Supply of funds to all parts of the organisation

Evaluating financial performance

$$\frac{\text{Return (Benefit)}}{\text{Investment (Cost)}} = \text{ROI}$$

Financial negotiation

Methods and tools of Finance Manager

Debt Equity Measures

EBIT – Earning Before Interest and Tax
EPS – Earning Per Sahare
PE Ratio – Price earning Ratio

Evaluating capital expenditure proposals

Pay back period
Average rate of return
Net present value
Profitability index
Internal rate of return

Working Capital Measures

ABC analysis
EOQ
Cash management

Evaluation of performance

Ratio
Fund flows
Cash flows

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SUBJECT: FINANCIAL MANAGEMENT (19COU10)

FINANCIAL MANAGEMENT
UNIT – I

▶ Functional Areas of Financial Management

▶ Significance of Financial Management

Functional Areas of Financial Management

Functional areas of management mean the sum total of all those activities which are performed in an organization to achieve the objectives of the organization. These functions can be of different types but personnel, Purchase, marketing and production activities have a special importance.

Functional Areas

Financial Management and Production Management

Financial Management and Material Management

Financial Management and Personal Management

Financial Management and Marketing Management

Financial Management and Accounting

Financial Management and Mathematics
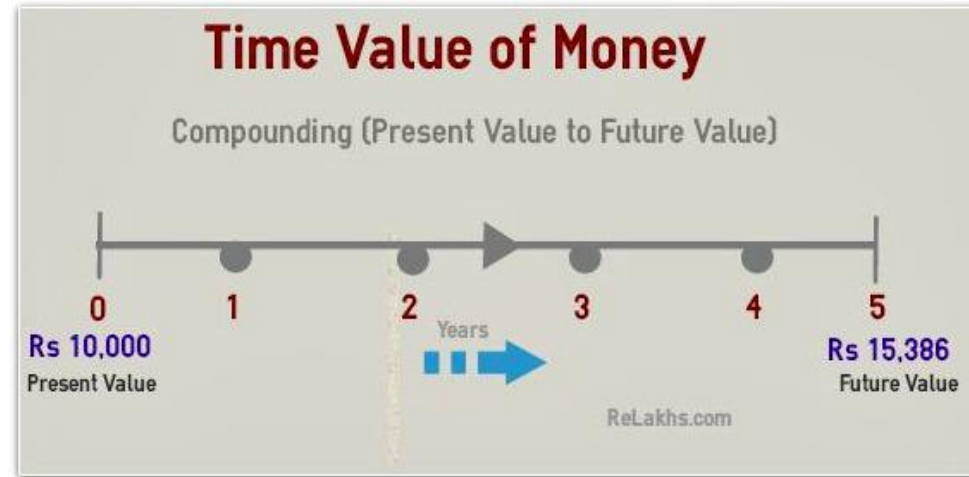
Financial Management and Economics

Significance of Financial Management

Financial Planning

Acquisition of Funds

Proper Use of Funds

Financial Decision

Improve Profitability

Increase the Value of the Firm

Promoting Savings

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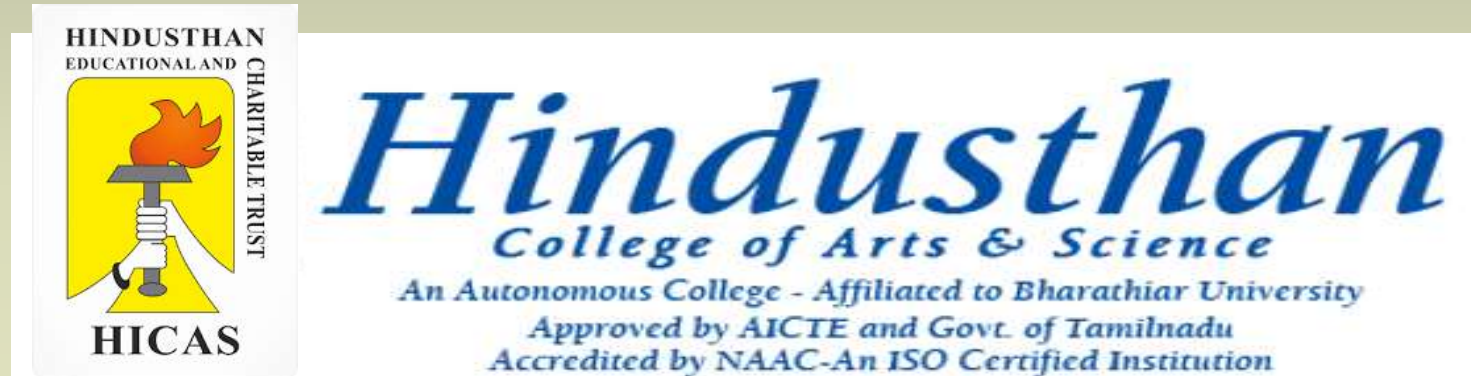
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SUBJECT: FINANCIAL MANAGEMENT (19COU10)

FINANCIAL MANAGEMENT
UNIT – II

Evaluation of Capital budgeting proposals

CAPITAL BUDGETING TECHNIQUES / METHODS

Capital budgeting is a technique for evaluating big investment projects. Net Present Value (NPV), Benefit to Cost Ratio, Internal Rate of Return (IRR), Payback Period and Accounting Rate of Return are some prominent capital budgeting techniques widely used in the finance area.

Evaluation of Capital budgeting proposals

Capital Budgeting Methods

Traditional or Non – Discounting Methods

Discounted Cash Flow or Time Adjusted Methods

- ➢ Pay back period Method
- ➢ Accounting or Average rate of return method

- ➢ Net Present value Method
- ➢ Internal Rate of Return Method
- ➢ Profitability Index Method
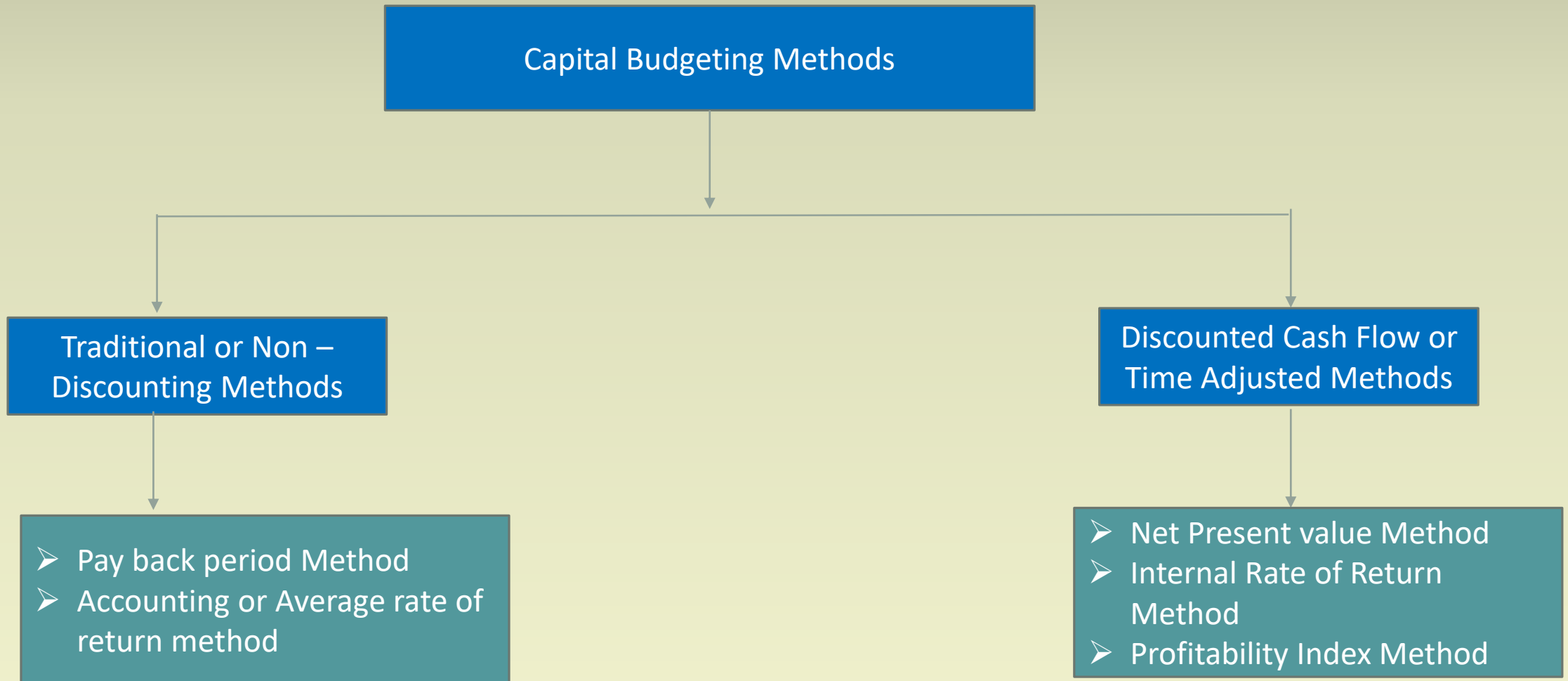
I. Traditional or Non – Discounting Methods

Theses methods do not discount cash flow to find out their present worth. The trade off between net investment and operating cash inflows.

How soon we get our cash back ?

Payback period method:

➢ This Method, sometimes called the payout or pay off or replacement method,
➢ Determine the **length of the time required to recover initial outlay of the project.**

➢ **Pay back period = Initial Investment / CFAT**

➢ **CFAT = Profit After tax + Depreciation**

Procedure for Computation of pay back period

Ascertain the initial investment
Ascertain cash inflow
Calculate Pay back period

Improvement in traditional approach to pay back period

Discounted pay back period method
Post pay back profitability
Pay back reciprocal

Accounting rate of return method (ARR):

- ARR is the annualized net income earned on the average funds invested in a project.
- It is measure based on accounting profit.(profit after depreciation and tax)
- Its used to measure overall profitability of the firm.
- Annual Return on original investment method = Annual average net earing / savings X 100
                                                                        Initial Investment

- Annual return on average investment method
- ARR = Annual average net earnings / average investment X100

Discounted cash flow (DCF) Methods or Time adjusted method or present value method

➢ The pay back period and ARR methods discounted above did not recognise the time value money
➢ The basic feature of discounted cash flow methods is that they are based on discounted cash flows.

Net present value Method

➢ This gives present value of cash inflows and outflows.
➢ The difference between present value of cash inflow and outflow is called net present value (NPV).

Internal Rate of Return (IRR):

➢ This is defined as the rate at which the net present value of the investment is zero.
➢ The discounted cash inflow is equal to the discounted cash outflow.
➢ This method also considers time value of money.
➢ It tries to arrive to a rate of interest at which funds invested in the project could be repaid out of the cash inflows.
➢ It is called internal rate because it depends solely on the outlay and proceeds associated with the project and not any rate determined outside the investment.

Profitability Index or (PI) Method :

➢ This method is a variant of the NPV method.
➢ It is also known as benefit cost ratio or present value index.
➢ It is also based on the basic concept of discounting the future cash flows

➢ PI = Present value cash inflows / Present value of cash outflow

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➢ VIDEO LINK:

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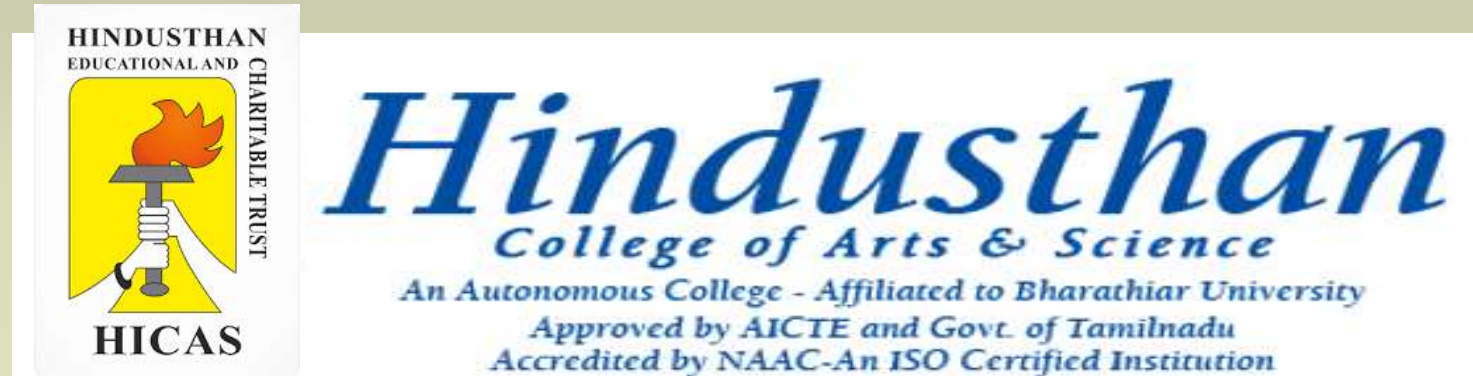
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SUBJECT: FINANCIAL MANAGEMENT (19COU10)

FINANCIAL MANAGEMENT
UNIT – II

Types of capital Budgeting Decision

Traditional Method : Payback Methods

CAPITAL BUDGETING TYPES

Types of Capital Budgeting Decision

On the basis of firm Existence

- Replacement and modernisation
- Expansion Decision
- Diversification decision

On the basis of decision situation

- Mutual Exclusive decision
- Accept and Reject decision
- Contingent Decision
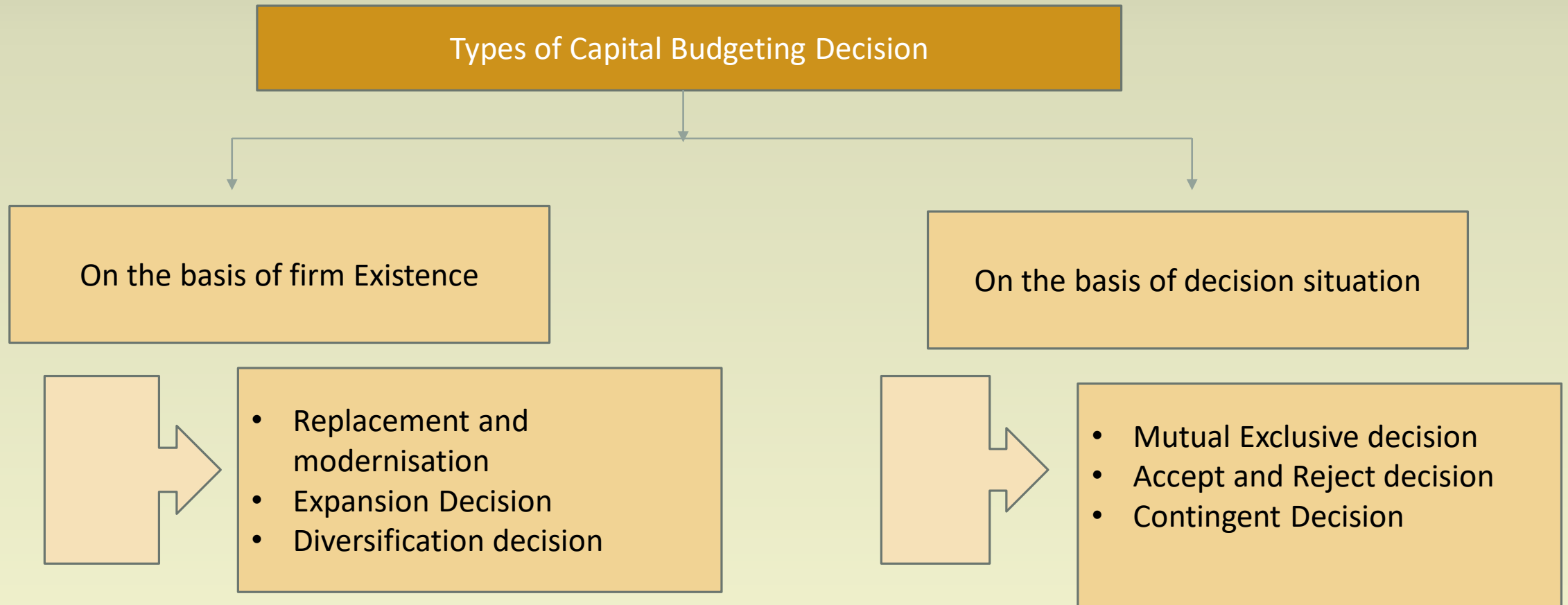
Pay back Period Method

1. A project has an Initial Investment of Rs. 200000. it will produce cash flows after tax of Rs. 50,000 per annum for six years. Compute the payback period for the project.

Solution :

Computation of payback period

Initial Investment = 200000

Cash inflow = 50000

Payback Period = 200000/50000

Payback Period = 4 Years

Pay back Period = Initial Investment / CFAT

2. A project Cost is 100000 and Yield an annual cash inflow of Rs. 20000 for 8 years calculate its payback periods.

Solution :

Computation of payback period

Initial Investment = 100000

Cash inflow = 20000

Payback Period = 100000/20000

Payback Period = 5 Years

Pay back Period = Initial Investment / Annual cash Inflow

3. Determine the payback period for a project which requires cash outlays of Rs. 10,000, and generate cash inflow of Rs. 2000, Rs. 4000, Rs.3000, Rs. 2,000 in I st , 2 nd, 3 rd , 4 th year respectively ?

Solution :

Computation of payback period

Total cash outlays = 10,000

Total cash inflows for Ist 3 years = 2000+3000+4000

= Rs. 9,000

Therefore,   1000 has been recovered from 2000 of 4th year .

= 12/2000 x1000

= 6 months

Pay back Period = Initial Investment / Annual cash Inflow

Payback Period is = 3 years 6 months

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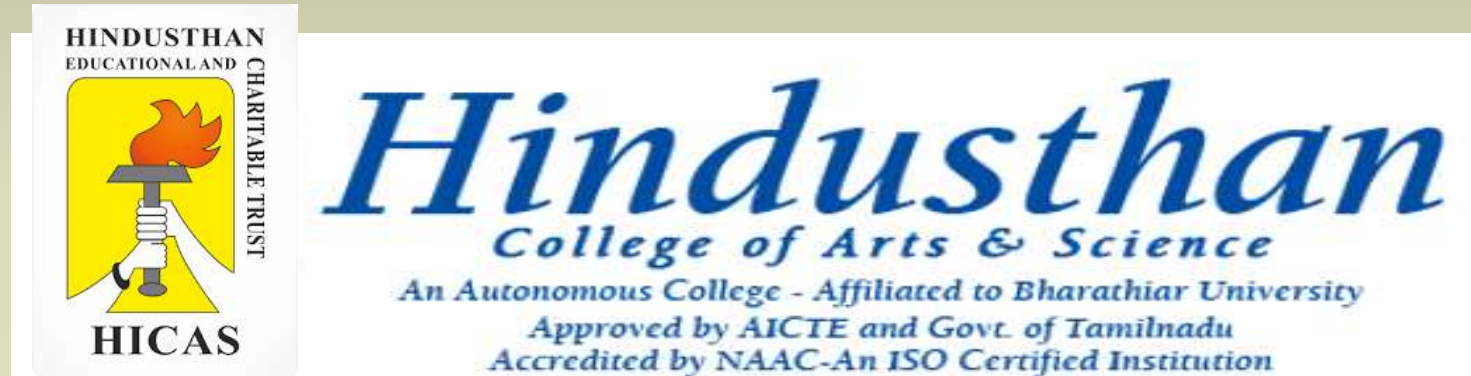
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SUBJECT: FINANCIAL MANAGEMENT (19COU10)

FINANCIAL MANAGEMENT
UNIT – II

Traditional Method : Payback Methods

Pay back Period Method

1. A project has an Initial Investment of Rs. 250000. it will produce cash flows after tax of Rs. 30,000 per annum, for ten years. Compute the payback period for the project.

Solution :

Computation of payback period

Initial Investment = 250000

Cash inflow = 30000

Payback Period = 250000/30000

Payback Period = 8 Years 3 months

Pay back Period = Initial Investment / CFAT

2.Project Y has an Initial Investment of 500000. it cash flows for 5 years are Rs. 150000,Rs. 180000,Rs. 150000, Rs. 132000, and Rs. 120000 determine the payback period.

Pay back Period = Initial Investment / Annual cash Inflow

Solution :

Computation of payback period Differential (CFAT)

Statement showing cumulative cash inflow

S.No.	CFAT Rs.	Cumulative CFAT Rs.
1	150000	150000
2	180000	330000
3	150000	480000
4	132000	612000
5	120000	732000

Total cash outlays = 500000

Total cash inflows for = 480000

The remaining Amount of Rs, 20000 is to be recovered in the 4 th year

Time required for earnings Rs. 132000 in fourth year

= 12/132000 x 20000

=1.8 months approximately 2 Months

Therefore, payback period is = 3.2 Months

3. A Company has to choose one of the following exclusive projects. Investment required for each project is Rs. 1,50,000, Both the projects have to be depreciated on straight line basis. The Tax rate is 50%.

Year	Profit before depreciation	
	Project X Rs.	Project Y Rs.
I	42000	42000
II	48000	45000
III	70000	40000
IV	70000	50000
V	20000	100000

Calculate payback period

Solution :

In this problem, profit before depreciation is given. For calculation of pay back period. CFAT (profit before depreciation, after tax) is needed.

Project X:

Statement showing CFAT & Cumulative CFAT

Year	Profit before Dep. & Tax	Dep. (150000/5)	PBT	PAT	CFAT	Cum. CFAT
(1)	(2) Rs.	(3) Rs.	(4) Rs.	(5) Rs.	(6) Rs.	(7) Rs.
I	42000	30000	12000	6000	36000	36000
II	48000	30000	18000	9000	39000	75000
III	70000	30000	40000	20000	50000	125000
IV	70000	30000	40000	20000	50000	175000
V	20000	30000	-10000	-10000	20000	195000

3rd year Rs. 125000 has been recovered, Rs. 25000 is left out of initial investment, In the 4th year, the CFAT is Rs. 50000. It means the payback period is between third and fourth years.

Therefore payback period for project X = 3 Years + (25000/50000 x12)

= 3 years 6 months

Project Y:

Statement showing CFAT & Cumulative CFAT

Year	Profit before Dep. & Tax	Dep. (150000/5)	PBT	PAT	CFAT	Cum. CFAT
(1)	(2) Rs.	(3) Rs.	(4) Rs.	(5) Rs.	(6) Rs.	(7) Rs.
I	42000	30000	12000	6000	36000	36000
II	45000	30000	15000	7500	37500	73500
III	40000	30000	10000	5000	35000	108500
IV	50000	30000	20000	10000	40000	148500
V	100000	30000	70000	35000	65000	213500

4rd year Rs. 148500 has been recovered, Rs. 1500 is left out of initial investment, In the 5th year, the CFAT is Rs. 65000. It means the payback period is between third and 4th and 5th years.

Therefore payback period for project X = 4 Years + (1500/65000 x365 days)

= 4 years 9 days

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SUBJECT: FINANCIAL MANAGEMENT (19COU10)

FINANCIAL MANAGEMENT
UNIT – II

Traditional Method : Payback Methods

4. It is proposed to introduce a new machine to increase the production capacity of department X. Two machines are available. Type A and Type B. the following information is available:

Details	A Rs.	B Rs.
Cost of machine	350000	630000
Estimated life (Year)	7	10
Estimated savings	20000	32000
Additional Cost of indirect Material p.a	10000	16000
Estimated savings in wages:		
Employees not required	15	20
wages per employees per annum	10000	16000
Additional cost of maintenance (p.a)	7200	12000
Additional cost pf Supervision (p.a)	24000	36000

Working Notes :

Computation of amount of Depreciation

> = Cost of Machine / Estimated life

Machine A= 350000/ 7 years   Machine A= Rs. 50000

Machine B= 630000/ 10 years   Machine B= Rs. 63000

Profitability Statement

Details	Machine A Rs.	Machine B Rs.
Estimated Saving Scrap:		
Scrap	20000	32000
Wages (15 x 10000) (20 x 16000)	150000	320000
Total savings (A)	**170000**	**352000**

Details	Machine A Rs.	Machine B Rs.
Less : Estimated Additional costs per year:		
Indirect material	10000	16000
cost of maintenance	7200	12000
Cost of supervision	24000	36000
Total additional costs (B)	41200	64000
Profit before depreciation & tax (A-B)	**128800**	**288000**
Less: Depreciation	50000	63000
Profit before tax	78800	225000
Less: Tax @ 50 %	39400	112500
profit after tax	39400	112500
Add: Depreciation	50000	63000
CFAT	**89400**	**175500**
Payback period = Investment / CFAT	350000/89400	630000/175500
	3.91 years	3.59 years

Recommendation : The payback period of Machine B is lesser than Machine A.
Hence its recommended to purchase Machine B

5

5. A project costs Rs. 20 lakh and yield annualy a profit of Rs. 3 lakh after depreciation at 12.5 % but before tax 50% calculate payback period.

Solution :

For Calculation of payback period, CFAT (Cash inflow before depreciation, after tax) has to be found out.

Statement Showing CFAT

Particulars	Rs.
Profit after depreciation before tax	300000
Less : tax @ 50%	150000
	150000
Add: Depreciation (2000000 x 12.5 %)	250000
CFAT	400000

Therefore , payback period = Initial investment / CFAT = 2000000 / 400000

= 5 Years

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SUBJECT: FINANCIAL MANAGEMENT (19COU10)

FINANCIAL MANAGEMENT
UNIT – II

Traditional Method : Discounted Payback Method

○ Average Rate of Return Method

Discounted Payback Period Method

1. Project M has an initial investment of Rs. 3 lakh. Its cash flows for five years are Rs. 90000, Rs. 108000 Rs. 90000, Rs. 79200 and Rs. 72000. Determine discounted paybak period Assuming a Discounted Rate of 10% Pa.

Statement showing Discounted CFAT & Cumulative Discounted CFAT

Year	CFAT Rs.	P.V Factor at 10%	DCFAT Rs.	Cum. DCFAT.
(1)	(2) Rs.	(3) Rs.	(4) Rs.	(5) Rs.
I	90000	0.909	81810	81810
II	108000	0.826	89208	171018
III	90000	0.751	67590	238608
IV	79200	0.683	54094	292702
V	72000	0.621	44712	337414

In the 4th year, 292702 has been recovered, Rs. 7298 is left out of initial investment. In the 5th year, the CFAT is 44712. it means the payback period is between 4th and 5ht years.

Therefore, Discounted payback period

= 4 years + (7298/44712x12)

= 4 years 2 months

Accounting (or) Average Rate of Return (ARR) Method

1. Compute ARR from the following data:

Cost Sales : Rs. 400000

Useful life : 5 years

Cash flow after tax (CFAT) : Rs. 172000 pa.

Since CFAT (profit before depreciation, after tax) is given in the problem, Profit after depreciation and tax has to be found out to calculate ARR.

CFAT	172000
Less: Depreciation	80000
(400000/ 5 years)	
Profit after dep. & Tax	92000

Therefore, Accounting rate of return (ARR) = Profit after dep. & Tax / Original investment x 100

= 92000 / 400000 x 100

= 23 %

2. Project K requires an investment of Rs. 20 lakh and yields profit after tax and depreciation as follows.

Year	1	2	3	4	5
Profit after Tax & Dep. (Rs.)	100000	150000	250000	260000	160000

At the end of 5th year, the plant can be sold for Rs. 160000, you are required to calculate ARR.

Solution :

Average rate of Return = Average profit / Average investment x 100

Average profit = 100000+150000+250000+260000+160000 / 5 years

= 920000/5

= 184000

Average investment = Original investment- Scrap value / 2

=2000000-160000/2

= Rs. 920000

ARR = 184000/920000 x 100

= 20 %

3. Determine the following average rate of return from the following data of two machines A and B

Particulars	Machine A	Machine B
Cost	56125	56125
Annual estimated income after depreciation and income tax:		
First Year	3375	11375
Second Year	5375	9375
Third year	7375	7375
Fourth Year	9375	5375
Fifth year	11375	3375
	36875	36875
Estimated life in year	5	5
Estimated salvage value (Rs.)	3000	3000
Average income tax rate	55%	55%
Additional Working Capital (Rs.)	5000	6000

Depreciation has been charged on straight line basis.

Average rate of Return = Annual Average net earning / Average investment x 100

Computation of Annual Net Earnings:

Annual average net earnings = Total income / No. of Years

Machine A   **= 36875 / 5**

= Rs. 7375

Machine B   **= 36875 / 5**

= Rs. 7375

Computation of Annual Investment:

Average Investment = Original investment – Scrap value / 2 + Additional working cap. + scrap value

Machine A   **= 56125 – 3000 /2 +5000+3000**

= Rs. 34562.50

Machine B = 56125 – 3000 /2 +6000+3000

= Rs. 35562.50

ARR of Machine A = 7375 / 34562.50 X 100   = Rs. 21.34 %

ARR of Machine B = 7375 / 34562.50 X 100   = Rs. 20.74 %

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SUBJECT: FINANCIAL MANAGEMENT (19COU10)

FINANCIAL MANAGEMENT
UNIT – II

Improvement in traditional Approach

: Payback method and profitability methods

: Net present value Methods

Payback profitability and Payback Index

1. For each of the following project compute payback period, post payback profitability and post payback profitability index

Project A

Initial Investment = 50000

Annual cash inflow = 10000

Estimated life = 8 years

Project B

Initial Investment = 50000

Annual cash inflow = 15000

(for next 5 years) = 5000

Estimated life = 8 years

Payback period = Initial outlay / Annual cash inflow

Payback Profitability = Annual cash inflow X Remaining life after payback

Post Payback Profitability Index = post Payback profit / Investment X 100

Project A :

Initial Outlay   = 50000

Annual Cash inflow = 10000 X 5

         For 5 years = 50000

Post payback profitability

= Annual Cash inflow X Remaining life after payback

Remaining 3 years

= 10000 X 3

= 30000

Post payback profitability Index :

Post Payback Profitability Index = post Payback profit / Investment X 100

= 30000/ 50000 X 100

= 60 %

Project B :

Initial Outlay = 50000

Annual Cash inflow = 15000 X 3 = 45000

For Next 4th year = 5000 X 1 = 5000

= 50000

Therefore Will get 4th years = 50000

Post payback profitability

= Annual Cash inflow X Remaining life after payback

Remaining 4 years we get 5000 each year

= 5000 X 4

= 20000

Post payback profitability Index :

Post Payback Profitability Index = post Payback profit / Investment X 100

= 20000/ 50000 X 100

= 40 %

Net present value Method

2. An investment of Rs. 10,000 (having scrap value of Rs. 500) yield the following returns :

Year	1	2	3	4	5
CFAT	4,000	4,000	3,000	3,000	2,500

The cost of capital is 10 % . Is the investment desirable ? Discuss it according to NPV method assuming the P.V. factors for 1st , 2nd, 3rd, 4th and 5th year – 0.909,0.826,0751,0.683 and 0.620 respectively.

Solution:

Statement showing Net present Value

Year	CFAT	P.V Factor	Present Value
	Rs.	@ 10 %	Rs.
1	4000	0.909	3636
2	4000	0.826	3304
3	3000	0.751	2253
4	3000	0.683	2049
5	2500	0.620	1550
	500 (Scrap)	0.620	310

Total present value of cash inflows   13102

Less : Present value of cash outflow (10000 x 1)   10000

Net Present Value (NPV)   **3102**

Since Net Present Value (NPV) is positive , the investment id desirable

3. Lisa Metals Ltd., is considering two different investment proposals, X and Y the details are as under .

Particulars	Proposal X Rs.	Proposal Y Rs
Investment Cost	190000	400000
CFAT (Cash inflow before depreciation and after tax)		
Year 1	80000	160000
Year 2	80000	160000
Year 3	90000	240000

Suggest the most attractive proposal on the basis of NPV method considering that the future incomes are discounted at 12 %.

Solution:

Statement showing Net present Value

Year	CFAT	P.V Factor	Present Value
	Rs.	@ 12 %	Rs.
1	80000	0.893	71440
2	80000	0.797	63760
3	90000	0.712	64080

Total present value of cash inflows

199280

Less : Present Value of cash outflow (190000 X 1)

190000

NPV

9280

Solution:

Statement showing Net present Value

Year	CFAT	P.V Factor	Present Value
	Rs.	@ 12 %	Rs.
1	160000	0.893	142880
2	160000	0.797	127520
3	240000	0.712	170880

Total present value of cash inflows — 441280

Less : Present Value of cash outflow (400000 X 1) — 400000

NPV — **41280**

NPV is more in proposal Y and therefore, it should be accepted

4.From the following information calculate the net present value of two projects and suggest which of the two project should be accepted assuming a discount rate of 10%.

Particulars	Proposal X Rs.	Proposal Y Rs
Investment Cost	20000	30000
Estimated life	5 Years	5 Years
Scrap Value	1000	2000
The profit before depreciation after tax		
1st year	5000	20000
2nd year	10000	10000
3rd year	10000	3000
4th year	3000	3000
5th year	2000	2000

Present Value of Re.1 at 10 % . Discount factors for 1st , 2nd, 3rd, 4th and 5th year – 0.909,0.826,0751,0.683 and 0.620 respectively.

Solution:

Statement showing Net present Value – X proposals

Year	CFAT	P.V Factor	Present Value
	Rs.	@ 10 %	Rs.
1	5000	0.909	4545
2	10000	0.826	8260
3	10000	0.751	7510
4	3000	0.683	2049
5	2000	0.620	1240
1000 (Scrap)		0.620	620

Total present value of cash inflows — 24224

Less : Present value of cash outflow (20000 x 1) — 20000

Net Present Value (NPV) — **4224**
, the investment id desirable

The profit before depreciation after tax

1st year	5000	20000
2nd year	10000	10000
3rd year	10000	3000
4th year	3000	3000
5th year	2000	2000

Solution:

Statement showing Net present Value – Y proposals

Year	CFAT	P.V Factor	Present Value
	Rs.	@ 10 %	Rs.
1	20000	0.909	18180
2	10000	0.826	8260
3	3000	0.751	2253
4	3000	0.683	2049
5	2000	0.620	1240
	2000 (Scrap)	0.620	1240

Total present value of cash inflows — 33222

Less : Present value of cash outflow (30000 x 1) — 30000

Net Present Value (NPV)
, the investment id desirable — **3222**

The profit before depreciation after tax		
1st year	5000	20000
2nd year	10000	10000
3rd year	10000	3000
4th year	3000	3000
5th year	2000	2000

13

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Class: II B.Com. B (2019 Only)

SUBJECT: FINANCIAL MANAGEMENT (19COU10)

FINANCIAL MANAGEMENT
UNIT – II

Improvement in traditional Approach

: Internal Rate of Return

: Profitability Index methods

Internal Rate of Return Method

1. Initial outlay Rs. 50000 life of the assets 5 years and estimated annual cash inflow Rs. 12500. Calculate the internal rate of return.

Present Value = Initial outlay / Annual Cash inflow

= 50000 / 12500

= 4 Years

The present value factor found in the present value annuity table in the column of 5 years (life of assets). The figure 3.9927 is (near to 4) found in the row 8%

Therefore , Internal Rate of Return = 8 %

2. Initial outlay Rs. 100000

life of the assets 6 years and

Estimated annual cash inflow Rs. 20000. Calculate the internal rate of return.

Present Value = Initial outlay / Annual Cash inflow

= 100000 / 20000

= 5 Years

The present value factor found in the present value annuity table in the column of 6 years (life of assets). The figure 4.917 is (near to 5) found in the row 6%

Therefore , Internal Rate of Return = 6 %

3. A project which is presently done entirely by manual method has a labour cost of Rs. 46,000 a year. It is Proposed to install a machine to do a job which involves an investment of Rs. 80000 and an annual operating cost of Rs. 10000. Assume that the machine can be written off in 5 years on straight line depreciation Basis for tax purposes. Salvage value at the end of its economic life is zero. The tax rate is 55%. Analysis the Economic implications of the proposal by the IRR method.

Statement Showing cash inflow (CFAT)

Particulars	Rs.	
		PV Factor = Initial Investment / CFAT
Cost Savings (Lower running expenses (46000-10000)	36000	
		= 80000/25000
Less : Tax @ 55 %	19800	
		=3.2
	16200	
Add: Tax advantage on depreciation	8800	P.V Annuity table shows the closest factor to 3.2 is 3.199 at 17% rate of discount factor So, IRR = 17%
80000/5 = 16000 x 55 %		
CFAT (1-5) years	25000	

Profitability Index method

1. The cash flows from two mutually exclusive projects X and Y are as under:

Year	Project X Rs.	Project Y Rs
0	-44000	-54000
1 -7 (annual)	12000	14500
Project life	7 years	7 years

Calculate profitability index at 15% discount rate and suggest which project is profitable.

Solution:

Statement showing Net present Value

Year	CFAT	P.V Factor	Present Value
	X Rs.	@ 15 %	X Rs.
1 - 7	12000	4.160	49920

Total present value of cash inflows — 49920

Less : Present value of cash outflow (44000 x 1) — 44000

Net Present Value (NPV) — 5920

Year	Project X Rs.	Project Y Rs
0	-44000	-54000
1 -7 (annual)	12000	14500
Project life	7 years	7 years

Solution:

Statement showing Net present Value

Year	CFAT	P.V Factor	Present Value
	Y Rs.	@ 15 %	Y Rs.
1 - 7	14500	4.160	60320

		Present Value
Total present value of cash inflows		60320
Less : Present value of cash outflow (54000 x 1)		54000
Net Present Value (NPV)		6320

Present value factor (P.I) = P.V of Cash inflow / P.V of Cash outflow

Project X = 49920 / 44000 = 1.135

Project Y = 60320 / 54000 = 1.11

Analysis : P.I of project X is higher than that of project Y, So, project X is profitable

The capital rationing

The capital rationing situation refers to the choice of investment proposal under financial constraints in terms of a given size of capital expenditure budget. The project selection under capital rationing involves two stages.

Soft Capital Rationing
It is when the restriction is imposed by the management.
Hard Capital Rationing
It is when the capital infusion is limited by *external sources*.

CAPITAL RATIONING METHOD

The method of capital rationing can be bifurcated in four steps. The steps are

1.Evaluation of all the investment proposals using the capital budgeting techniques of Net Present Value (NPV), Internal Rate of Return (IRR) and Profitability Index (PI)

2.Rank them based on various criterion viz. NPV, IRR, and Profitability Index

3.Select the projects in descending order of their profitability till the capital budget exhausts based on each capital budgeting technique.

4.Compare the result of each technique with respect to total NPV and select the best out of that.

Table A-4 Present Value Interest Factors for a One-Dollar Annuity Discounted at *k* Percent for *n* Periods: PVIFA = [1 - 1/(1 + k)^n] / k

Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	20%	24%	25%	30%
1	0.9901	0.9804	0.9709	0.9615	0.9524	0.9434	0.9346	0.9259	0.9174	0.9091	0.9009	0.8929	0.8850	0.8772	0.8696	0.8621	0.8333	0.8065	0.8000	0.7692
2	1.9704	1.9416	1.9135	1.8861	1.8594	1.8334	1.8080	1.7833	1.7591	1.7355	1.7125	1.6901	1.6681	1.6467	1.6257	1.6052	1.5278	1.4568	1.4400	1.3609
3	2.9410	2.8839	2.8286	2.7751	2.7232	2.6730	2.6243	2.5771	2.5313	2.4869	2.4437	2.4018	2.3612	2.3216	2.2832	2.2459	2.1065	1.9813	1.9520	1.8161
4	3.9020	3.8077	3.7171	3.6299	3.5460	3.4651	3.3872	3.3121	3.2397	3.1699	3.1024	3.0373	2.9745	2.9137	2.8550	2.7982	2.5887	2.4043	2.3616	2.1662
5	4.8534	4.7135	4.5797	4.4518	4.3295	4.2124	4.1002	3.9927	3.8897	3.7908	3.6959	3.6048	3.5172	3.4331	3.3522	3.2743	2.9906	2.7454	2.6893	2.4356
6	5.7955	5.6014	5.4172	5.2421	5.0757	4.9173	4.7665	4.6229	4.4859	4.3553	4.2305	4.1114	3.9975	3.8887	3.7845	3.6847	3.3255	3.0205	2.9514	2.6427
7	6.7282	6.4720	6.2303	6.0021	5.7864	5.5824	5.3893	5.2064	5.0330	4.8684	4.7122	4.5638	4.4226	4.2883	4.1604	4.0386	3.6046	3.2423	3.1611	2.8021
8	7.6517	7.3255	7.0197	6.7327	6.4632	6.2098	5.9713	5.7466	5.5348	5.3349	5.1461	4.9676	4.7988	4.6389	4.4873	4.3436	3.8372	3.4212	3.3289	2.9247
9	8.5660	8.1622	7.7861	7.4353	7.1078	6.8017	6.5152	6.2469	5.9952	5.7590	5.5370	5.3282	5.1317	4.9464	4.7716	4.6065	4.0310	3.5655	3.4631	3.0190
10	9.4713	8.9826	8.5302	8.1109	7.7217	7.3601	7.0236	6.7101	6.4177	6.1446	5.8892	5.6502	5.4262	5.2161	5.0188	4.8332	4.1925	3.6819	3.5705	3.0915
11	10.368	9.7868	9.2526	8.7605	8.3064	7.8869	7.4987	7.1390	6.8052	6.4951	6.2065	5.9377	5.6869	5.4527	5.2337	5.0286	4.3271	3.7757	3.6564	3.1473
12	11.255	10.575	9.9540	9.3851	8.8633	8.3838	7.9427	7.5361	7.1607	6.8137	6.4924	6.1944	5.9176	5.6603	5.4206	5.1971	4.4392	3.8514	3.7251	3.1903
13	12.134	11.348	10.635	9.9856	9.3936	8.8527	8.3577	7.9038	7.4869	7.1034	6.7499	6.4235	6.1218	5.8424	5.5831	5.3423	4.5327	3.9124	3.7801	3.2233
14	13.004	12.106	11.296	10.563	9.8986	9.2950	8.7455	8.2442	7.7862	7.3667	6.9819	6.6282	6.3025	6.0021	5.7245	5.4675	4.6106	3.9616	3.8241	3.2487
15	13.865	12.849	11.938	11.118	10.380	9.7122	9.1079	8.5595	8.0607	7.6061	7.1909	6.8109	6.4624	6.1422	5.8474	5.5755	4.6755	4.0013	3.8593	3.2682
16	14.718	13.578	12.561	11.652	10.838	10.106	9.4466	8.8514	8.3126	7.8237	7.3792	6.9740	6.6039	6.2651	5.9542	5.6685	4.7296	4.0333	3.8874	3.2832
17	15.562	14.292	13.166	12.166	11.274	10.477	9.7632	9.1216	8.5436	8.0216	7.5488	7.1196	6.7291	6.3729	6.0472	5.7487	4.7746	4.0591	3.9099	3.2948
18	16.398	14.992	13.754	12.659	11.690	10.828	10.059	9.3719	8.7556	8.2014	7.7016	7.2497	6.8399	6.4674	6.1280	5.8178	4.8122	4.0799	3.9279	3.3037
19	17.226	15.678	14.324	13.134	12.085	11.158	10.336	9.6036	8.9501	8.3649	7.8393	7.3658	6.9380	6.5504	6.1982	5.8775	4.8435	4.0967	3.9424	3.3105
20	18.046	16.351	14.877	13.590	12.462	11.470	10.594	9.8181	9.1285	8.5136	7.9633	7.4694	7.0248	6.6231	6.2593	5.9288	4.8696	4.1103	3.9539	3.3158
21	18.857	17.011	15.415	14.029	12.821	11.764	10.836	10.017	9.2922	8.6487	8.0751	7.5620	7.1016	6.6870	6.3125	5.9731	4.8913	4.1212	3.9631	3.3198
22	19.660	17.658	15.937	14.451	13.163	12.042	11.061	10.201	9.4424	8.7715	8.1757	7.6446	7.1695	6.7429	6.3587	6.0113	4.9094	4.1300	3.9705	3.3230
23	20.456	18.292	16.444	14.857	13.489	12.303	11.272	10.371	9.5802	8.8832	8.2664	7.7184	7.2297	6.7921	6.3988	6.0442	4.9245	4.1371	3.9764	3.3254
24	21.243	18.914	16.936	15.247	13.799	12.550	11.469	10.529	9.7066	8.9847	8.3481	7.7843	7.2829	6.8351	6.4338	6.0726	4.9371	4.1428	3.9811	3.3272
25	22.023	19.523	17.413	15.622	14.094	12.783	11.654	10.675	9.8226	9.0770	8.4217	7.8431	7.3300	6.8729	6.4641	6.0971	4.9476	4.1474	3.9849	3.3286
30	25.808	22.396	19.600	17.292	15.372	13.765	12.409	11.258	10.274	9.4269	8.6938	8.0552	7.4957	7.0027	6.5660	6.1772	4.9789	4.1601	3.9950	3.3321
35	29.409	24.999	21.487	18.665	16.374	14.498	12.948	11.655	10.567	9.6442	8.8552	8.1755	7.5856	7.0700	6.6166	6.2153	4.9915	4.1644	3.9984	3.3330
36	30.108	25.489	21.832	18.908	16.547	14.621	13.035	11.717	10.612	9.6765	8.8786	8.1924	7.5979	7.0790	6.6231	6.2201	4.9929	4.1649	3.9987	3.3331
40	32.835	27.355	23.115	19.793	17.159	15.046	13.332	11.925	10.757	9.7791	8.9511	8.2438	7.6344	7.1050	6.6418	6.2335	4.9966	4.1659	3.9995	3.3332
50	39.196	31.424	25.730	21.482	18.256	15.762	13.801	12.233	10.962	9.9148	9.0417	8.3045	7.6752	7.1327	6.6605	6.2463	4.9995	4.1666	3.9999	3.3333

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Class: II B.Com. B (2019 Only)

SUBJECT: FINANCIAL MANAGEMENT (19COU10)

FINANCIAL MANAGEMENT
UNIT – II

- INTRODUCTION , MEANING AND DEFINITION OF CAPITAL BUDGETING

- OBJECTIVES AND FEATURES OF CAPITAL BUDGETING

INTRODUCTION OF CAPITAL BUDGETING

Capital budgeting is a process of evaluating investments and huge

expenses in order to obtain the best returns on investment.

RETURN ON INVESTMENT

Capital budgeting is made up of two words 'capital' and 'budgeting.' In this context, capital expenditure is the spending of funds for large expenditures like purchasing fixed assets and equipment, repairs to fixed assets or equipment, research and development, expansion and the like. Budgeting is setting targets for projects to ensure maximum profitability.

MEANING AND DEFINITION OF CAPITAL BUDGETING

Capital budgeting means planning the capital expenditure in acquisition of fixed (capital) assets such as land, building, plant or new projects as a whole it includes replacing and modernising a process, introducing a new product and expansion of the business.

It involves (DPR) Detailed project report

Cost and revenue statement

Charles T. Horngeren : capital budgeting is the

long term planning for making and financing proposed capital outlays.

4

OBJECTIVES OF CAPITAL BUDGETING

Capital expenditures are huge and have a long-term effect.

✓ **Selecting profitable projects**

An organization comes across various profitable projects frequently. But due to capital restrictions, an organization needs to select the right mix of profitable projects that will increase its shareholders' wealth.

✓ **Capital expenditure control**

Selecting the most profitable investment is the main objective of capital budgeting. However, controlling capital costs is also an important objective. Forecasting capital expenditure requirements and budgeting for it, and ensuring no investment opportunities are lost is the crux of budgeting.

✓ **Finding the right sources for funds**

Determining the quantum of funds and the sources for procuring them is another important objective of capital budgeting. Finding the balance between the cost of borrowing and returns on investment is an important goal of Capital Budgeting.

FEATURES OF CAPITAL BUDGETING

Capital budgeting is a crucial decision and to understand the concept in a better way, let us go through its following features:

Features of Capital Budgeting

- Huge Funds
- High Degree of Risk
- Affects Future Competitive Strengths
- Difficult Decision
- Estimation of Large Profits
- Long Term Effect
- Affects Cost Structure
- Irreversible Decision

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7

•**Huge Funds**: Capital budgeting involves expenditures of high value which makes it a crucial function for the management.

•**High Degree of Risk**: To take decisions which involve huge financial burden can be risky for the company.

•**Affects Future Competitive Strengths**: The company's future is based on such capital expenditure decisions. Sensible investing can improve its competitiveness, whereas a wrong investment may lead to business failure.

•**Difficult Decision**: When the future is dependent on capital budgeting decisions, it becomes difficult for the management to grab the most appropriate investment opportunity.

•**Estimation of Large Profits**: Any investment decision taken by the company is made with the perspective of earning desirable profits in the long term.

•**Long Term Effect**: The effect of the decisions taken today, whether favorable or unfavorable, will be visible in the future or the long term.

•**Affects Cost Structure**: The company's cost structure changes with the capital budgeting; for instance, it may increase the fixed cost such as insurance charges, interest, depreciation, rent, etc.

•**Irreversible Decision**: A decision once taken is tough to be amended since it involves a high-value asset which may not be sold at the same price once purchased.

A SIMPLE AV ABOUT FINANCE

➢ VIDEO LINK:

➢ HTTPS://WWW.YOUTUBE.COM/WATCH?V=TYHJWF-H3SY

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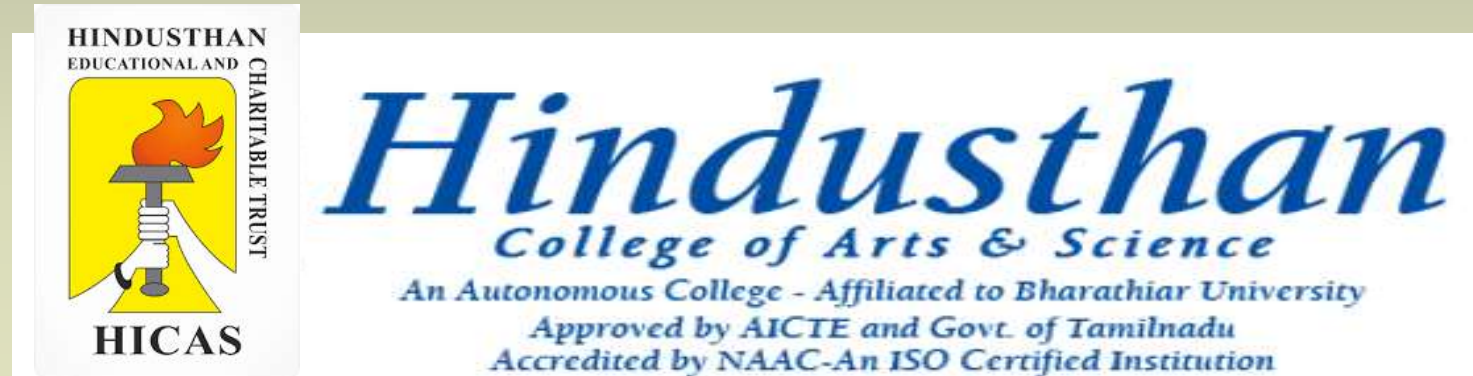
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SUBJECT: FINANCIAL MANAGEMENT
(19COU10)

FINANCIAL MANAGEMENT
UNIT – II

Capital Budgeting Decisions

Capital Budgeting Process

Capital Budgeting Decision
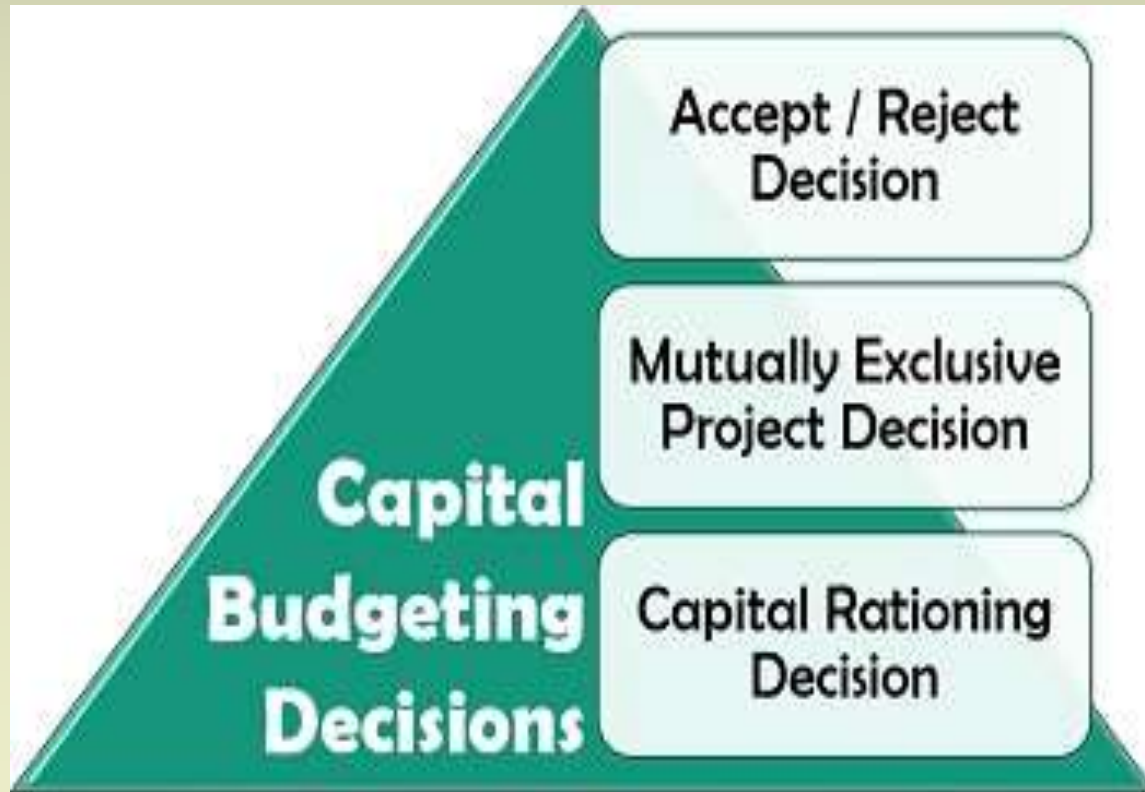
Accept / Reject Decision:

The projects which generate a high rate of return or cost of capital are accepted, and the plans which do not fulfil the criteria are rejected

Mutually Exclusive Project Decision:

These projects compete with one another, i.e., the possibility of accepting one project excludes the acceptance of the other

Capital Rationing Decision:

The term itself explains that the limitation of capital dominates such decisions. the projects with the highest percentage of profit or those which fulfil the requirements most can be selected

Capital Budgeting Process

Capital investment decision are part of the capital budgeting process, which is concerned with determining

Which specific project a firm should undertake?

The total amount of capital expenditure which the firm should undertake?

The total amount of capital expenditure should be financed generally ?

Identification of investment proposals

Screening the proposals

Evaluation of proposals

Fixing Priorities

Final Approval

Implementing proposals
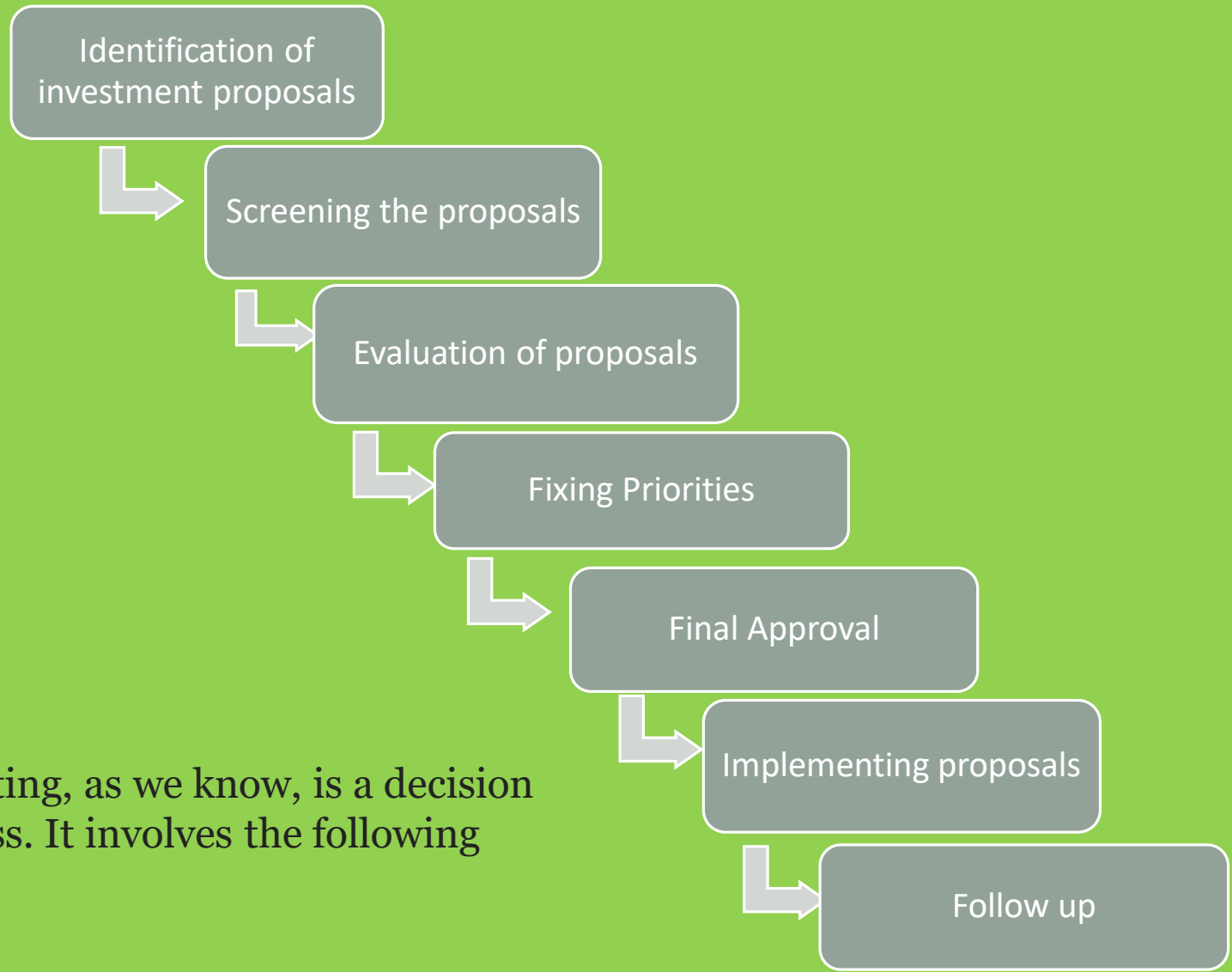
Follow up

Capital budgeting, as we know, is a decision making process. It involves the following Seven steps:

Identification of investment proposals

The company has various options for capital employment on a long-term basis. In the initial stage, the management needs to analyze the strengths and weaknesses of every project for foreseeing the potential of each option.

Screening the proposals

After getting the proposals, the expenditure planning committee analyses all the proposals from various angles to ensure that these are in accordance with the corporate strategies or selection criterion of the firm.

Evaluation of proposals

In the next step, the management assembles and compiles all the investment proposals on the grounds of cost, risk involvement, future profits, return on investment, etc

Fixing Priorities

All the accepted proposal are ranked and priorities are given : Current and Incomplete project given first priorities. Maintaining present efficiency, supplementing the income, expansion of project.

Final Approval

Finally Selected project send to top management with detailed report, both capital expenditure and of sources of fund to meet them.

Implementing proposals

After the apportioning of the long-term investment, the company comes into action for the execution of its decision. To avoid complications and excess time-consumption, the management should lay out a detailed plan of the project in advance.

Follow up

The last but the most crucial step is the follow-up and analysis of the project's performance. While the company's operations are steady, the management needs to measure and correlate the actual performance with that of the estimated one to figure out the deviation and take corrective actions for the same.

A simple AV about Finance

➢ VIDEO LINK:

https://www.youtube.com/watch?v=ps-tCMKVjzg

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SUBJECT: FINANCIAL MANAGEMENT (19COU10)

FINANCIAL MANAGEMENT
UNIT – III

Leverage and Types of Leverage

Leverage Analysis

Gaining larger benefits by using lesser amount of force

The word leverage is borrowed from physics and it is used frequently in FM

In FM it helps to understand

How to do MORE with Less ?

As it Happens in Physics

Meaning

Leverage is used to describe the ability of a firm to use FIXED cost assets or funds to increase the return to is equity shareholders.

Definition

James Horne : Leverage is the employment of an asset or funds for which the firm pays a fixed cost or fixed return.

According to Ezra Solomon: "Leverage is the ratio of net returns on shareholders equity and the net rate of return on capitalization".

According to J. C. Van Home: "Leverage is the employment of an asset or funds for which the firm pays a fixed cost of fixed return."

Types of Leverage

Operating leverage	Financial Leverage	Combined Leverage
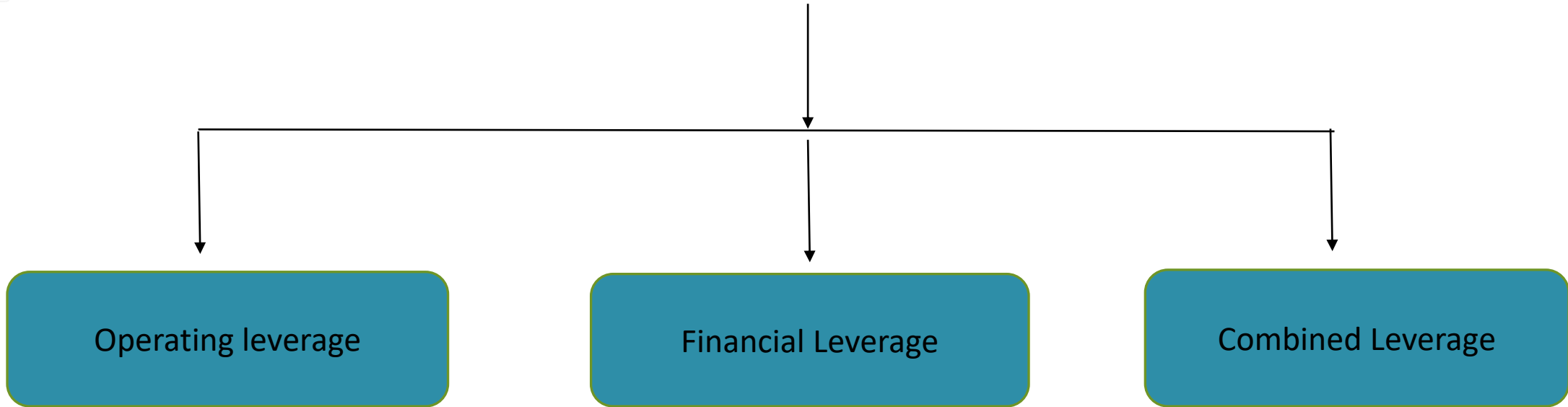
Operating leverage refers to the use of fixed operating costs such as depreciation, insurance of assets, repairs and maintenance, property taxes etc. in the operations of a firm. But it does not include interest on debt capital. Higher the proportion of fixed operating cost as compared to variable cost, higher is the operating leverage, and vice versa.

Operating leverage

1.It gives an idea about the impact of changes in sales on the operating income of the firm.

2.It magnifies the effect on EBIT for a small change in the sales volume.

3.It indicates increase in operating profit or EBIT.

4.It results from the existence of a higher amount of fixed costs in the total cost structure of a firm which makes the margin of safety low.

5.It indicates higher amount of sales required to reach break-even point.

Contribution / EBIT or Operating profit

Contribution = Sales – Variable Cost

DOL = Percentage change in EBIT / Percentage change in sales

Financial Leverage

It is primarily concerned with the financial activities which involve raising of funds from the sources for which a firm has to bear fixed charges such as interest expenses, loan fees etc. These sources include long-term debt, debentures, bonds etc. and preference share capital.

1.It helps the financial manager to design an optimum capital structure. The optimum capital structure implies that combination of debt and equity at which overall cost of capital is minimum and value of the firm is maximum.

2.It increases earning per share (EPS) as well as financial risk.

3.A high financial leverage indicates existence of high financial fixed costs and high financial risk.

4.It helps to bring balance between financial risk and return in the capital structure.

Financial Leverage = EBIT / EBT

EBIT = Earnings Before interest and Tax

EBT = Earnings before taxes

DFL = Percentage change in EPS / Percentage change in EBIT

Combined Leverage

Both operating and financial leverages are closely concerned with ascertaining the firm's ability to cover fixed costs or fixed rate of interest obligation, if we combine them, the result is total leverage and the risk associated with combined leverage is known as total risk. It measures the effect of a percentage change in sales on percentage change in EPS.

1.It indicates the effect that changes in sales will have on EPS.

2.It shows the combined effect of operating and financial leverage.

Combined Leverage = Operating leverage X Financial Leverage

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SUBJECT: FINANCIAL MANAGEMENT (19COU10)

FINANCIAL MANAGEMENT
UNIT – III

Operating Leverage

Operating Leverage

1. A firm sells only product at Rs. 12 per unit. Its variable cost is 8 per unit. Present sales are 1000 units. Calculate the operating leverage in each of the following situation;

I.   When fixed cost is Rs. 1000

II. When fixed cost is Rs. 1200

III. When fixed cost is Rs. 1500.

Solution :   Profitability Statement

Particulars	Situation I Rs.	Situation II Rs.	Situation III Rs.
Sales (1000 x 12)	12000	12000	12000
Less: Variable Cost (1000 x 8)	8000	8000	8000
Contribution	**4000**	**4000**	**4000**
Less : Fixed Cost	1000	1200	1500
Operating Profit (EBIT)	**3000**	**2800**	**2500**
Operating Leverage ; **Contribution /EBIT**	4000 / 3000	4000 / 2800	4000 / 2500

Situation 1 = 1.33 times

Situation 2 = 1.43 times

Situation 3 = 1.6 times

Analysis : From the above statement, it is quite evident that the operating leverage increases with every increase in share of fixed cost structure of the firm .

2. From the following information, Calculate operating leverage.

No. of units produced and sold : 30000

Selling price per unit : Rs. 20

Variable Cost per unit Rs. 10

Fixed cost per unit at current level of sales is Rs. 5. What will be the new operating leverage if the Variable cost is Rs. 12.

Statement of profit

Particulars	Rs.
Sales (30000 x 20)	600000
Less: Variable Cost (30000 x 10)	300000
Contribution	**300000**
Less : Fixed Cost	150000
Operating Profit (EBIT)	**150000**

Operating Leverage = Contribution / EBIT

= 300000 / 150000

= 2 times

Statement of profit (Variable Cost is Rs. 12 per unit)

Particulars	Rs.
Sales (30000 x 20)	600000
Less: Variable Cost (30000 x 12)	360000
Contribution	**240000**
Less : Fixed Cost	150000
Operating Profit (EBIT)	**90000**

Operating Leverage = Contribution / EBIT

= 240000 /90000

= 2.67 times

3. Find out degree of operating leverage from the following data:

EBIT (2005) = 40000

EBIT (2006) = 50000

Sales (2005) = 20000

Sales (2006) = 28000

Degree of operating leverage (DOL) = $\dfrac{\text{\% Change in EBIT}}{\text{\% Change in Sales}}$

% Change in EBIT = 10000/40000 x 100

% Change in EBIT = 25 %

% Change in Sales = 8000/20000 x 100

% Change in Sales = 40 %

DOL = 0.25 / 0.40 x 100

DOL = 62.5 %

4. X ltd sells 1000 units @ Rs. 20 per unit. The cost of production is Rs. 14 per unit The firm has a fixed cost of Rs. 1000. Assume that the sales of X ltd increases by 50 % . Find out DOL.

Statement of profit (Present)

Statement of profit (Expected) ?

Particulars	Rs.	Particulars	Rs.
Sales (1000 x 20)	20000	Sales (1500 x 20)	30000
Less: Variable Cost (1000 x 14)	14000	**Less:** Variable Cost (1500 x 14)	21000
Contribution	**6000**	**Contribution**	**9000**
Less : Fixed Cost	1000	**Less :** Fixed Cost	1000
Operating Profit (EBIT)	**5000**	Operating Profit (EBIT)	**8000**

Degree of operating leverage (DOL) = $\dfrac{\text{\% Change in EBIT}}{\text{\% Change in Sales}}$

% Change in EBIT   = 3000/5000 x 100

% Change in EBIT   = 60 %

% Change in Sales   = 10000/20000 x 100

% Change in Sales   = 50 %

DOL = 0.60 / 0.50 x 100

DOL = 1.2 %

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Class: II B.Com. B (2019 Only)

SUBJECT: FINANCIAL MANAGEMENT
(19COU10)

FINANCIAL MANAGEMENT
UNIT – III

Financial Leverage

Financial Leverage

1. Buddha Belly Ltd. Has a choice of the following three financial Plans:

	Plan I	Pla4n II	Plan III
Equity Share Capital	6 lakh	5 lakh	2 lakh
10 % Debentures	4 lakh	5 lakh	8 lakh
EBIT	2.5	2.5 lakh	2.5 lakh

You are required to ascertain Financial Leverage in each case and interpret it.

Solution :   Profitability Statement

Particulars	Plan I Rs.	Plan II Rs.	Plan III Rs.
EBIT	250000	250000	250000
Less: Interest on debentures @10 %	40000	50000	80000
EBT	**210000**	**200000**	**170000**
Financial Leverage = EBIT / EBT	250000/210000		**1.19 times**
	250000/200000		**1.25 times**
	250000/170000		**1.47 times**

Analysis : Financial Leverage is a measure of the risk of operating with debt financing. From the above statement, it is quit evident that if the amount of debt financing is proportionately greater I comparison with the equity capital, the degree of financial leverage also will be higher as in the case of financial plan III (i.e) 1.47 times .

2. The capital structure of tom gilbert Ltd., consists of the following securities:

45000 10 % preference shares of Rs. 100 each   4500000

500000 Equity shares of Rs. 10 Each   5000000

The company operating profit is Rs.1200000. the company is in 40% tax bracket.

You are required to find out the financial leverage of the company. What would be the new financial leverage if the operating profit increase to Rs. 1800000 and interpret your results.

Operating Profit Increases 1800000 ?

Statement Showing EBT

Particulars	Rs.
EBIT	1200000
Less: Preferential Dividend	750000
4500000 x 10% = 450000 x 100/60	
EBT	450000
Financial Leverage = EBIT / EBT	
= 1200000/ 450000	**= 2.67 times**

Particulars	Rs.
EBIT	1800000
Less: Preferential Dividend	750000
4500000 x 10% = 450000 x 100/60	
EBT	1050000
Financial Leverage = EBIT / EBT	
= 1800000/ 1050000	**= 4 times**

Analysis : The present Financial Leverage is a 2.67 times. It means 1 % change in EBIT will cause 2.67 % change in EBIT has increased by 50 % . This result in 75 % in EBT

3.) 25000 equity shares of Rs. 10 each 250000
2000 9 % pref. Shares of Rs. 100 each 200000
3000 10% Debentures of Rs. 100 each 300000
The company EBIT is Rs. 125000. Calculate the financial leverage assuming that the company is in 40 % tax bracket.

Statement Showing EBT

Particulars	Rs.
EBIT	125000
Less: interest on debentures 300000 x 10%	30000
Pref. dividend (pre tax basis)	
(200000 x 9% = 18000 x 100/60)	30000
EBT	65000

Financial Leverage = EBIT / EBT

= 125000/ 65000

= 1.92 times

4. Pierre Blondin Ltd has sales Rs. 12 lakh. The variable cost is 50% of sales, while the cost amount to Rs. 360000. the amount of interest on long term debt is Rs. 120000.

You are required to prepare the combined leverage and illustrate its impact if sales increase by 10%.

Statement of profit

sales increase by 10%. ?

Particulars	Rs.		
Sales	120000	Less: Interest on debt	120000
Less: Variable Cost (120000 x 50%)	600000	**EBT**	120000
Contribution	**600000**	**Combined Leverage**	
Less : Fixed Cost	360000	**Contribution / EBT**	
Operating Profit (EBIT)	**240000**	600000/120000	**5 times**

4. Pierre Blondin Ltd has sales Rs. 12 lakh. The variable cost is 50% of sales, while the cost amount to Rs. 360000. the amount of interest on long term debt is Rs. 120000.

You are required to prepare the combined leverage and illustrate its impact if sales increase by 10%.

Statement of profit sales increase by 10%. ?

Particulars	Rs.		
Sales + 1200000 + 10 %	13,20,000	Less: Interest on debt	120000
Less: Variable Cost (1320000 x 50%)	660000	**EBT**	120000
Contribution	**660000**	**Combined Leverage**	
Less : Fixed Cost	360000	**Contribution / EBT**	
Operating Profit (EBIT)	**300000**	660000/120000	**5.5 times**

% Increase in profit = Increase in profit / base profit

= 60000/120000 x100

= 50 %

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Class: II B.Com. B (2019 Only)

SUBJECT: FINANCIAL MANAGEMENT (19COU10)

FINANCIAL MANAGEMENT
UNIT – III

Leverage

Financial Leverage

5. The following figures relate to two companies. You are required to (a) calculate the operating, Financial and Combined leverages of the two companies and (b) comment on their relative risk position

	X Ltd., Rs.	Y Ltd., Rs.
Sales	400000	800000
Less : Variable Cost	160000	240000
Contribution	240000	560000
Less : Fixed Cost	128000	280000
Operating Profit (EBIT)	112000	280000
Less : Interest	48000	120000
Profit before tax	64000	160000

Solution :

	X Ltd.,	Y Ltd.,
Operating Leverage = Contribution / EBIT	240000/112000	560000/280000
	2.14 times	**2 times**

	X Ltd., Rs.	Y Ltd., Rs.
Sales	400000	800000
Less : Variable Cost	160000	240000
Contribution	240000	560000
Less : Fixed Cost	128000	280000
Operating	112000	280000

erating leverage is higher for X ltd then Y ltd . Hence X ltd. Has a greater degree sk.

	X Ltd.,	Y Ltd.,
Financial Leverage = EBIT / EBT	112000/64000	280000/160000
	1.75 times	1.75 times

Analysis : Both company have the same degree of financial risk .

X Ltd.,	Y Ltd.,

Combined Leverage = Contribution / EBT

240000/64000	560000/160000

3.75 times	3.50 times

X ltd combined leverage :
Financial leverage x operating leverage = 1.75 x 2.14
= 3.75

Analysis : Overall business risk is slightly high for X ltd due to high degree of operating leverage even if degree of financial leverage is same.

6. Firm has sales of Rs. 1500000, variable cost of Rs. 900000, fixed cost of Rs.300000 and debt of Rs. 800000 at 8%

i. Calculate its operating , financial and combined leverages
ii. If the firm decides to double its EBIT, how much of a rise in sales would be needed on a percentage basis ?

Statement of profit

Particulars	Rs.
Sales	1500000
Less: Variable Cost	900000
Contribution	**600000**
Less : Fixed Cost	300000
Operating Profit (EBIT)	**300000**
Less: Interest (800000 x 8%)	64000
EBT	236000

Operating Leverage = Contribution / EBIT

2 times

?

Financial Leverage = EBIT / EBT

1.27 times

?

Combined Leverage = Contribution / EBT

2.54

?

Required Sales to double EBIT = Fixed cost + desired EBIT / PV ratio

Current PV ratio = Contribution / Sales x 100

= 600000/1500000 x 100

= 40 %

= 300000 + 600000 / 40% = 2250000

The capital structure of Madan Ltd. Consists of equity share capital of 800000(share of Rs. 100 each) and Rs. 800000 of 12 % debentures. Sales have increased from 80000 units to 100000 units the selling price is rs. 15 per unit variable cost amounted to Rs. 9 per unit and fixed cost amounts to Rs. 160000. the income tax rate is assumed to be 50%.

- Required to calculate % increase in EPS
- Determine operating leverage at 80000 units and 100000 units
- Determine financial leverage at 80000 units and 100000 units

Statement of profit 80000 units

Particulars	Rs.
Sales (15 per unit)	1200000
Less: Variable Cost (9 per unit)	720000
Contribution	**480000**
Less : Fixed Cost	160000
Operating Profit (EBIT)	**320000**
Less: Interest (800000 x 12%)	96000
EBT	224000
Less: Tax 50%	112000

EPS = EAT / No. of Equity Shares

112000/8000

14

% increase in EPS =

?

No of equity share is = 800000/100 = 8000 shares

EAT		112000

Statement of profit 1,00,000 units

Particulars	Rs.
Sales (15 per unit)	1500000
Less: Variable Cost (9 per unit)	900000
Contribution	**600000**
Less : Fixed Cost	160000
Operating Profit (EBIT)	**440000**
Less: Interest (800000 x 12%)	96,000
EBT	344000
Less: Tax 50%	344000

EPS = EAT / No. of Equity Shares

172000/8000

21.50

% increase in EPS =

21.5 – 14/14

53.57 %

No of equity share is =8000000/100 = 8000 shares

EAT | **172000**

- operating leverage at 80000 units and 100000 units?

- Contribution / EBIT =
- 80000= 480000/320000
  - = 1.5 times

    100000= 600000/440000

    = 1.36

- Financial leverage at 80000 units and 100000 units?

- EBIT/ EBT =
- 80000 = 320000/ 224000
  - = 1.43 times

    100000 = 440000/344000

    = 1.28 times

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Class: II B.Com. B (2019 Only)

SUBJECT: FINANCIAL MANAGEMENT (19COU10)

FINANCIAL MANAGEMENT
UNIT – III

Capital Structure

Capital Structure

What is capital Structure ?   Capital Structure is FINANCIAL DECISION

FINANCIAL DECISION :
A decision which is concerned with the amount of finance to be raised from various Long term sources of Funds

Long term sources ?

DEBT   EQUITY   PREFERENCE

How much finance is needed ?

From Where such finance can be procured ?

And in What Proportion ?

Capital Structure

"Capital Structure of a company refers to the **composition** or make up of its capitalization and it include all long-term capital resources"

- Gerestenbeg

Capital structure is the combination of capitals from Different sources of finance

Capital Structure

- Equity 60%
- Preference 25%
- Depentures 15%

Optimum Capital Structure

Maximum value of the firm

Minimum cost of capital

Maximisation of Equity Shareholders wealth

Maximum EPS / MPS
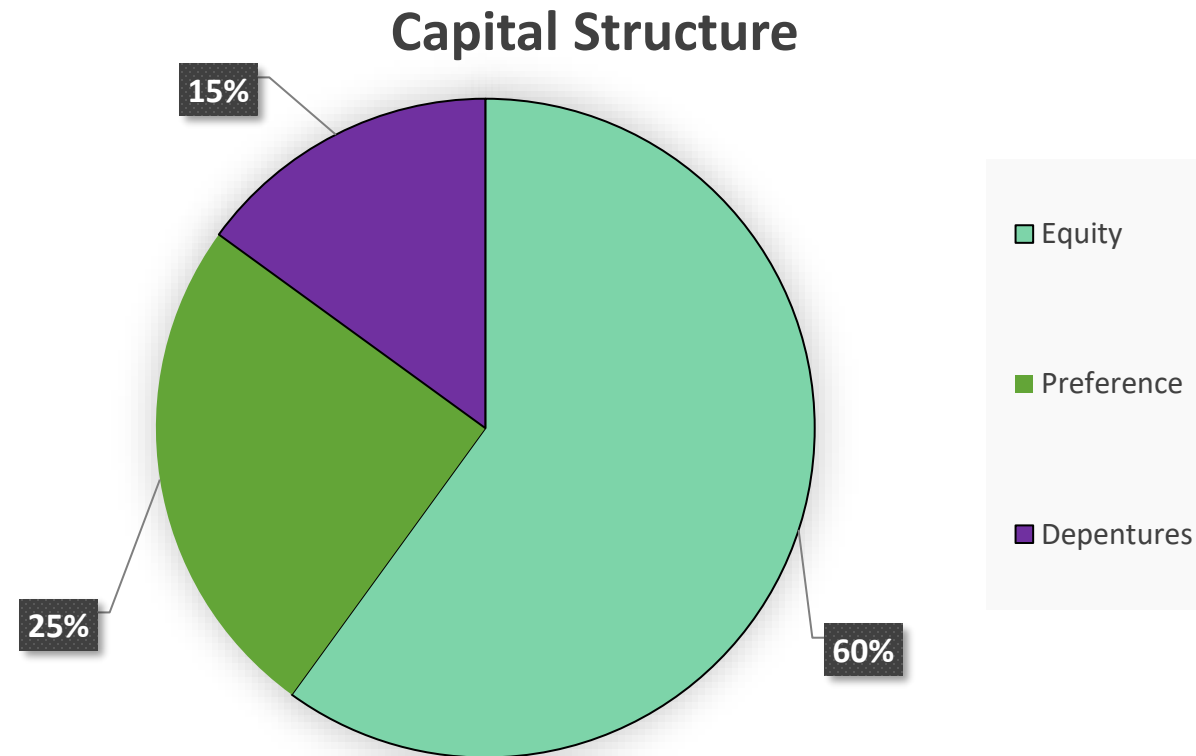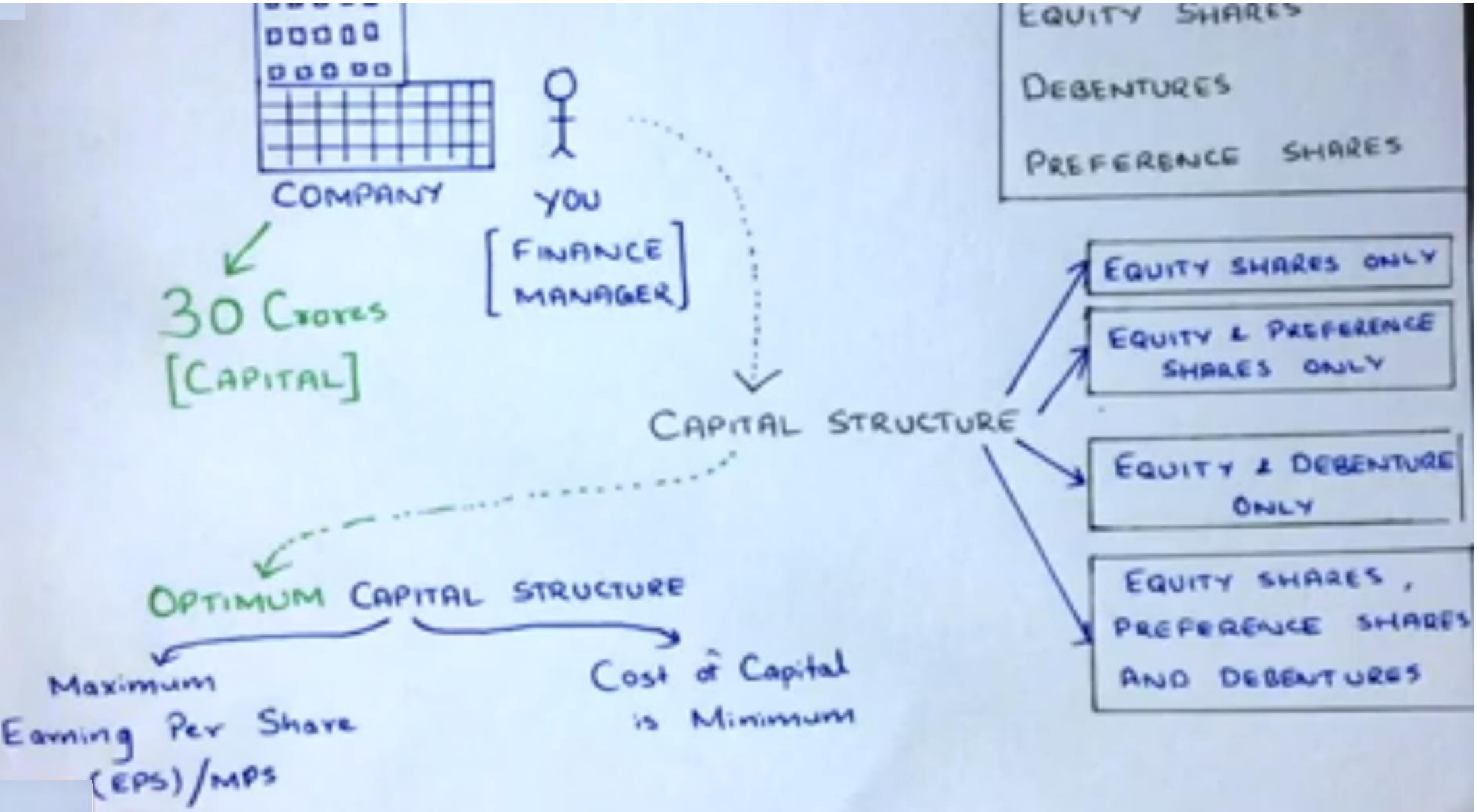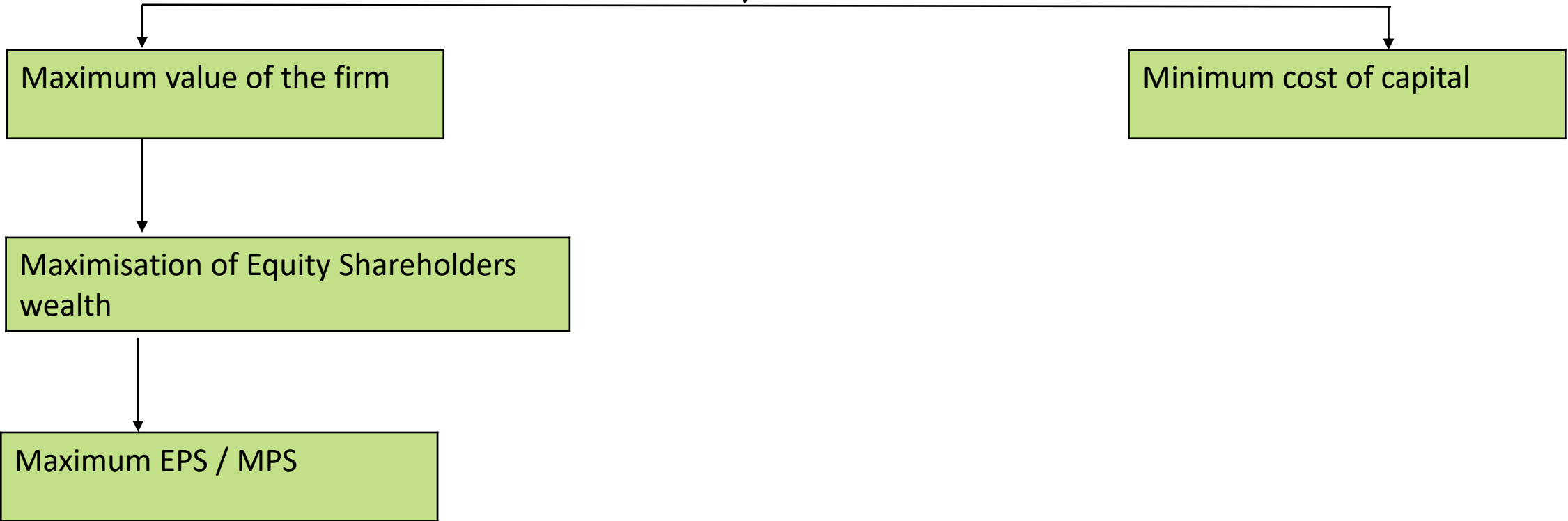
Difference between Capital Structure and Capitalization

Basis	Capital Structure	Capitalization
Coverage	It refers to mix of various sources of capital e.g. capital, debt, etc.	It refers to all long term securities e.g. equity, debt and fre reserves not meant for distribution.
Scope	It is overall policy decision about the proportion of various sources of long term finance	It is implementation of policy decision about capital structure.
Nature	It is a Qualitative decision	It is a quantitative decision.

Features of Capital Structure

Minimum Cost

Maximum Return

Minimum risk

Maximum Control

Flexibility

Proper liquidity

Conservatism

Full Utilisation

Balance leverage

Simpilicity

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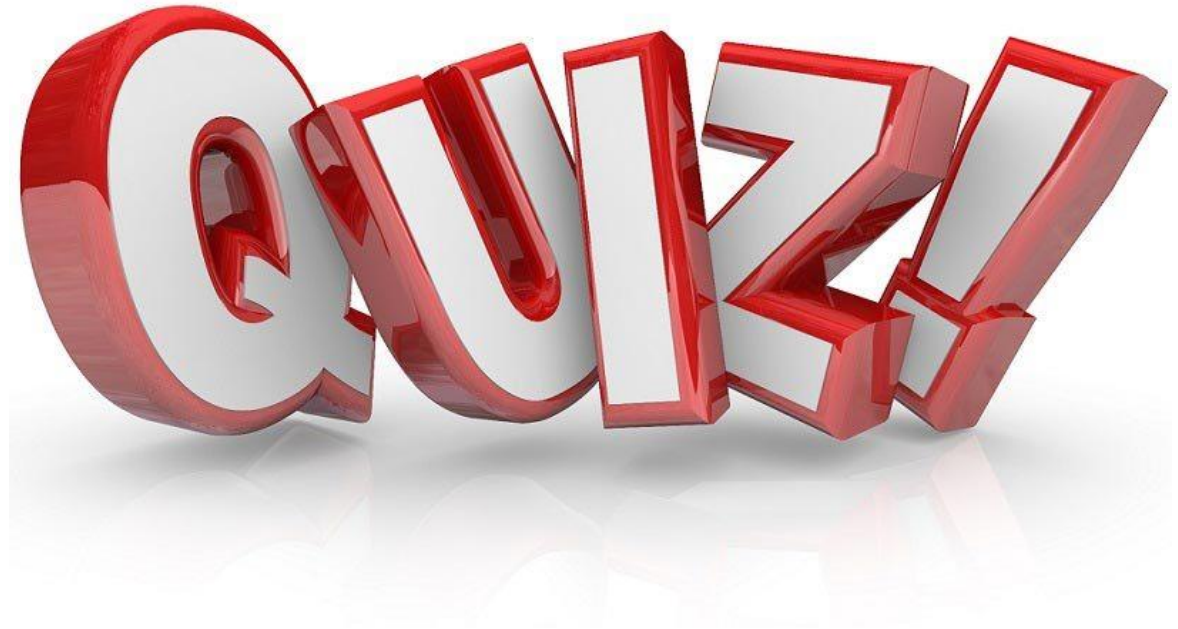
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SUBJECT: FINANCIAL MANAGEMENT (19COU10)

FINANCIAL MANAGEMENT
UNIT – III

Factors Determining Capital Structure Capital Structure

Theories of Capital Structure

Factors Determining Capital Structure

Trading on Equity

Stability on sales

Exercise control

Cost of Capital

Statutory requirements

Capital market condition

Corporate Taxation

Government policies

Flexibility

Timing

Size of the firm

Purpose of financing

Period of finance

Flotation cost

Requirement of investors

Provision for future growth
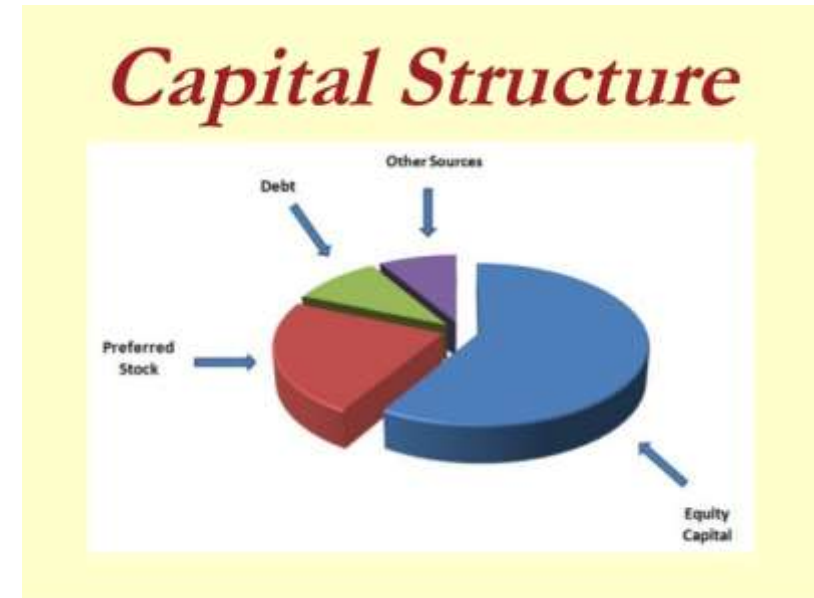
Capital Structure

Theories of capital Structure

Net Income (NI) Approach

Net operating Income (NOI)

Traditional Approach

Modigiliani and Miller approach

Net Income (NI) Approach

David Durand' suggested the two famous capital structure theories, viz, Net Income

According to NI approach a firm may increase the total value of the firm by lowering its cost of capital. When cost of capital is lowest and the value of the firm is greatest, we call it the optimum capital structure for the firms and at this point, the market price per share is maximised.

i. Cost of Debt (K_d) is less then Cost of Equity (K_e);

ii. There are no taxes, and

iii. The use of debt does not change the risk perception of the investors since the degree of leverage is increased to that extent.

Net operating Income (NOI)

Now we want to highlight the Net Operating Income (NOI) Approach which was advocated by David Durand based on certain assumptions.

i.   The over all cost of capital remains constant.
ii. Debt and equity is not important.
iii. Equity capitalization rate is increased.
iv. There is no corporate taxes.
v.   The cost of debt is constant.

Form of Capital:

Capital Structure

FUNDS

Debt Capital   Equity Capita
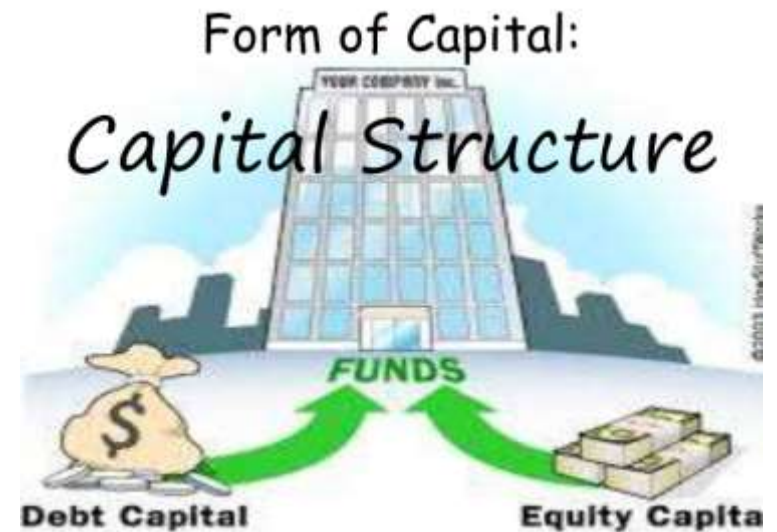
Traditional Approach

This approach is also as intermediate approach as it takes a midway between NI approach and NOI approach It helps to reduce the overall cost of capital and increase value of the firm.

Modigiliani and Miller approach

Modigliani and Miller have explained relationship between cost of capital , capital structure and total value of the firm under two conditions

i.   When there are no corporate tax
ii. When there are corporate tax.

Kindly type the link to attend the

 Questionnaires (MCQ).

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Class: II B.Com. B (2019 Only)

SUBJECT: FINANCIAL MANAGEMENT (19COU10)

FINANCIAL MANAGEMENT
UNIT – III

I . EBIT – EPS Analysis

II. NI approach

Capital Structure Theory

1. Sind Ltd. A widely held company is considering a major expansion of its production facilities and the following financing alternatives are available:

	Alternatives		
	X	Y	Z
Equity share capital (Rs. 10 each)	60	30	10
12 % Debentures	-	20	25
15 % Loan from a financial institution	-	10	25

Expected rate of return before tax is 20%. The rate of dividend of the company is less than 18 %. The company at present has low debt. Corporate taxation is 35%. Which of the alternatives you would choose?

Statement showing evaluation of financing alternatives

Particulars	Alternatives
	A Rs
EBIT (60 x 20%)	12
Less: Interest on debt	-
Interest on loan	-
EBT	12
Less : Tax @ 35 %	4.20
EAT	7.80
EPS	7.80 / 6
EAT/No. of Equity shares	1.30

	Alternatives		
	X	Y	Z
Equity share capital (Rs. 10 each)	60	30	10
12 % Debentures	-	20	25
15 % Loan from a financial institution	-	10	25

Statement showing evaluation of financing alternatives

Particulars	Alternatives
	B Rs
EBIT (60 x 20%)	12
Less: Interest on debt	2.40
Interest on loan	1.50
EBT	8.10
Less : Tax @ 35 %	2.835
EAT	5.265
EPS	5.265 / 3
EAT/No. of Equity shares	1.755

20 x 12 %

10 x 15 %

	Alternatives		
	X	Y	Z
Equity share capital (Rs. 10 each)	60	30	10
12 % Debentures	-	20	25
15 % Loan from a financial institution	-	10	25

Statement showing evaluation of financing alternatives

Particulars	Alternatives
	B Rs
EBIT (60 x 20%)	12
Less: Interest on debt	3.00
Interest on loan	3.75
EBT	5.25
Less : Tax @ 35 %	1.8375
EAT	3.41254
EPS	3.4125 /1
EAT/No. of Equity shares	3.4125

25x 12 %

25x 15 %

	Alternatives		
	X	Y	Z
Equity share capital (Rs. 10 each)	60	30	10
12 % Debentures	-	20	25
15 % Loan from a financial institution	-	10	25

Analysis : The alternative C will give the higher EPS and hence it should be chosen.

7

1. From the following information you are required to compute capitalisation, capital structure and financial structure

Equity share capital Rs. 10,00,000

Preference share capital Rs. 5,00,000

Long term loans and Debt 2,00,000

Retained earnings 6,00,000

Capital surplus 50,000

Current liabilities Rs. 1,50,000

Total capital Rs. 25,00,000

I. Capitalisation

Capitalisation	Rs.	Percentage
Equity share capital	10,00,000	58.82 %
Preference share capital	5,00,000	29.41 %
Long term loans and Debt	2,00,000	11.76 %
	17,00,000	100 %

Equity share capital	10,00,000 / 17,00,000 = 58.82 %

1. From the following information you are required to compute capitalisation, capital structure and financial structure

Equity share capital Rs. 10,00,000

Preference share capital Rs. 5,00,000

Long term loans and Debt 2,00,000

Retained earnings 6,00,000

Capital surplus 50,000

Current liabilities Rs. 1,50,000

Total capital Rs. 25,00,000

ii. Capital Structure

Capitalisation	Rs.	Percentage
Equity share capital	10,00,000	42.55 %
Preference share capital	5,00,000	21.27 %
Long term loans and Debt	2,00,000	8.51%
Retained earnings	6,00,000	25.83 %
Capital surplus	50,000	2.12 %
	23,50,000	100 %

1. From the following information you are required to compute capitalisation, capital structure and financial structure

Equity share capital Rs. 10,00,000

Preference share capital Rs. 5,00,000

Long term loans and Debt 2,00,000

Retained earnings 6,00,000

Capital surplus 50,000

Current liabilities Rs. 1,50,000

Total capital Rs. 25,00,000

III. Financial Structure

Capitalisation	Rs.	Percentage
Equity share capital	10,00,000	40 %
Preference share capital	5,00,000	20 %
Long term loans and Debt	2,00,000	8 %
Retained earnings	6,00,000	24 %
Capital surplus	50,000	2 %
Current liabilities	1,50,000	6 %
	25,00,000	100 %

II. Net Income Approach

2. Jennifer Ltd. Is expecting an annual EBIT of Rs. 200000. the company has Rs. 200000 in 10 % debentures. The equity capitalisation rate (ke) is 12 %. You are required to ascertained the total value of the firm and overall cost of capital. What happens if the company borrows Rs. 200000 at 10% to repay equity capital ?

Solution

Value of firm under NI Approach = Market value of equity + Market value of debt

Calculation of Market value of equity

Particulars	Rs
Earning before interest and tax (EBIT)	2,00,000
Less : Interest (2,00,000 x 10 %)	20,000
Earning available to equity shareholders	1,80,000

ii. Calculation value of the firm

Value of firm under NI Approach = Market value of equity + Market value of debt

= 15,00,000 + 2,00,000

= 17,00,000

iii. Calculation of Overall cost of capital (Ko)
= EBIT / Value of the firm x 100

= 2,00,000 / 17,00,000 x 100

= 11.76 %

Calculation of value of the firm when the company borrows Rs. 2 lakh to pay off equity capital ?

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SUBJECT: FINANCIAL MANAGEMENT (19COU10)

FINANCIAL MANAGEMENT
UNIT – III

I. NI approach

1. From the following information you are required to compute capitalisation, capital structure and financial structure

1. Capitalisation

Equity share capital Rs. 10,00,000

Preference share capital Rs. 5,00,000

Long term loans and Debt 2,00,000

Retained earnings 6,00,000

Capital surplus 50,000

Current liabilities Rs. 1,50,000

Total capital Rs. 25,00,000

I. Capitalisation

Capitalisation	Rs.	Percentage
Equity share capital	10,00,000	58.82 %
Preference share capital	5,00,000	29.41 %
Long term loans and Debt	2,00,000	11.76 %
	17,00,000	100 %

Equity share capital	10,00,000 / 17,00,000 = 58.82 %

3

2. Capital structure

Equity share capital Rs. 10,00,000

Preference share capital Rs. 5,00,000

Long term loans and Debt 2,00,000

Retained earnings 6,00,000

Capital surplus 50,000

Current liabilities Rs. 1,50,000

Total capital Rs. 25,00,000

ii. Capital Structure

Capitalisation	Rs.	Percentage
Equity share capital	10,00,000	42.55 %
Preference share capital	5,00,000	21.27 %
Long term loans and Debt	2,00,000	8.51%
Retained earnings	6,00,000	25.83 %
Capital surplus	50,000	2.12 %
	23,50,000	100 %

3. Financial structure

Equity share capital Rs. 10,00,000

Preference share capital Rs. 5,00,000

Long term loans and Debt 2,00,000

Retained earnings 6,00,000

Capital surplus 50,000

Current liabilities Rs. 1,50,000

Total capital Rs. 25,00,000

III. Financial Structure

Capitalisation	Rs.	Percentage
Equity share capital	10,00,000	40 %
Preference share capital	5,00,000	20 %
Long term loans and Debt	2,00,000	8 %
Retained earnings	6,00,000	24 %
Capital surplus	50,000	2 %
Current liabilities	1,50,000	6 %
25,00,000		**100 %**

From the following information, calculate the capitalization, capital structure and financial structures.

Balance Sheet

Liabilities		Assets	
Equity share capital	50,000	Fixed assets	25,000
Preference share capital	5,000	Good will	10,000
Debentures	6,000	Stock	15,000
Retained earnings	4,000	Bills receivable	5,000
Bills payable	2,000	Debtors	5,000
Creditors	3,000	Cash and bank	10,000
	70,000		70,000

(i) Calculation of Capitalization

S. No.	Sources	Amount
1.	Equity share capital	50,000
2.	Preference share capital	5,000
3.	Debentures	6,000
	Capitalization	**61,000**

(ii) Calculation of Capital Structures

S. No.	Sources	Amount	Proportion
1.	Equity share capital	50,000	76.92
2.	Preference share capital	5,000	7.69
3.	Debentures	6,000	9.23
4.	Retained earnings	4,000	6.16
		65,000	**100%**

(iii) Calculation of Financial Structure

S. No.	Sources	Amount	Proportion
1.	Equity share capital	50,000	71.42
2.	Preference share capital	5,000	7.14
3.	Debentures	6,000	8.58
4.	Retained earnings	4,000	5.72
5.	Bills payable	2,000	2.85
6.	Creditors	3,000	4.29
		70,000	**100%**

II. Net Income Approach

2. Jennifer Ltd. Is expecting an annual EBIT of Rs. 200000. the company has Rs. 200000 in 10 % debentures. The equity capitalisation rate (ke) is 12 %. You are required to ascertained the total value of the firm and overall cost of capital. What happens if the company borrows Rs. 200000 at 10% to repay equity capital ?

Solution

Value of firm under NI Approach = Market value of equity + Market value of debt

Calculation of Market value of equity

Particulars	Rs
Earning before interest and tax (EBIT)	2,00,000
Less : Interest (2,00,000 x 10 %)	20,000
Earning available to equity shareholders	1,80,000

Market value of equity

= Earning available to equity shareholders / cost of equity

=180000/12 %

= **15,00,000**

ii. Calculation value of the firm

Value of firm under NI Approach = Market value of equity + Market value of debt

= 15,00,000 + 2,00,000

= **17,00,000**

iii. Calculation of Overall cost of capital (Ko)
= EBIT / Value of the firm x 100

= 2,00,000 / 17,00,000 x 100

= **11.76 %**

Calculation of value of the firm when the company borrows Rs. 2 lakh to pay off equity capital ?

Kindly type the link to attend the

 Questionnaires (MCQ).

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Class: II B.Com. B (2019 Only)

SUBJECT: FINANCIAL MANAGEMENT
(19COU10)

FINANCIAL MANAGEMENT
UNIT – III

I . NI approach

II. NOI approach

II. Net Income Approach

2. Jennifer Ltd. Is expecting an annual EBIT of Rs. 200000. the company has Rs. 200000 in 10 % debentures. The equity capitalisation rate (ke) is 12 %. You are required to ascertained the total value of the firm and overall cost of capital. What happens if the company borrows Rs. 200000 at 10% to repay equity capital ?

Solution

Value of firm under NI Approach = Market value of equity + Market value of debt

Calculation of Market value of equity

Particulars	Rs
Earning before interest and tax (EBIT)	2,00,000
Less : Interest (2,00,000 x 10 %)	40,000
Earning available to equity shareholders	1,60,000

Market value of equity = 1,60,000/12 %

= Rs.13,33,333

ii. Calculation value of the firm

Value of firm under NI Approach = Market value of equity + Market value of debt

= 13,33,333 + 4,00,000

= **17,33,333·**

iii. Calculation of Overall cost of capital (Ko)
= EBIT / Value of the firm x 100

= 2,00,000 / 17,33,333 x 100

= **11.54 %**

An analysis : Under this net approach, increase in debt content leads to increase in value of firm and decrease in overall cost of capital.

II. Net Operating Income Approach

3. Dewey Ltd. Has debt has an EBIT of Rs. 4,50,000. The cost of debt is 10% and the outstanding debt is Rs. 12,00,000. The overall capitalisation rate (Ko0 is 15 %. Calculate the total value of the firm and equity capitalisation rate under NOI approach.

Solution

Calculation of Market value of firm.

Market Value of firm = EBIT /OVERALL COST OF CAPITAL (Ko) x 100

= 4,50,000 /15%

= Rs. 30,00,000

Calculation of Market value of Equity

Market Value of firm = Market Value of equity + Market value of debt

Market Value of Equity = Market value of firm − Market value of debt

= 30,00,000 − 12,00,000

= Rs. 18,00,000

Calculation of earnings available to equity shareholders

Particulars	Rs
Earning before interest and tax (EBIT)	4,50,000
Less : Interest (12,00,000 x 10 %)	1,20,000
Earning available to equity shareholders	3,30,000

Calculation of equity capitalization rate (Ke)

Ke = Earnings available to equity shareholders / Market value of equity x 100

= 3,30,000 / 18,00,000 x 100   = 18.33 %

NI and NOI approach

Company A and company B are in the same risk class and identical. In all respects that company A uses Debt. While company B does not. Levered company has Rs. 20 Lakh debentures. Carrying 12% rate of interest .Both companies earn 20 % before interest and taxes on their total assetss of Rs.50 lakh. Assume perfect capital markets, tax rate of 50 % And Capitalisation rate of 10% for an equity company. Compute the value of both companies under (a) NI aaproach (b) Net operating Income approach

a.) Calculation value of the firm under NI approach

Value of firm under NI Approach = Market value of equity + Market value of debt

Computation of Market value of equity

Calculation of Market value of equity

Particulars	Company A Rs	Particulars	Company B Rs ?
Earning before interest and tax (EBIT) (50.00,000 x 20%)	10,00,000	Earning before interest and tax (EBIT) (50.00,000 x 20%)	10,00,000
Less : Interest (20,00,000 x 12 %)	2,40,000	**Less :** Interest	Nil
EBT	7,60,000	EBT	10,00,000
Less : Tax @ 50 %	3,80,000	**Less :** Tax @ 50 %	5,00,000
Earning available to equity shareholders	**3,80,000**	Earning available to equity shareholders	**5,00,000**

Market Value of Equity = Earnings available to equity shareholders / Cost of Equity(Ke)

Company A = 3,80,000 / 10 %

= 38,00,000

Company B = 5,00,000/ 10 %

= 50,00,000

Computation of Value of Company

Value of Company = Market value of Equity + Market Value of debt

Company A = 38,00,000 + 20,00,000   = 58,00,000

Company B = 50,00,000 + 0   = 50,00,000

Computation of Value of Company Under NOI Approach – A company

Value of Company = Market value of Equity + Market Value of debt

Market value of Equity = EBIT (100%- Tax) / Cost of Equity (Ke)

Market value of Equity = 10,00,000 (100-50%) /10 %

5,00,000 / 10%   = **Rs. 50,00,000**

Market value of Debt = Value of Debt x Tax Rate

= 20,00,000 x 50%   = Rs. 10,00,000

Therefore Value of Company A = Market Value of Equity + Market Value of Debt

50,00,000 + 10,00,000 = **60,00,000**

Computation of Value of Company Under NOI Approach – B company

Value of Company = Market value of Equity + Market Value of debt

Market value of Equity = EBIT (100%- Tax) / Cost of Equity (Ke)

Market value of Equity = 10,00,000 (100-50%) /10 %

5,00,000 / 10%   = Rs. **50,00,000**

Therefore Value of Company B = Market Value of Equity + Market Value of Debt

50,00,000 + 0 = **50,00,000**

Kindly type the link to attend the

 Questionnaires (MCQ).

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Class: II B.Com. B (2019 Only)

SUBJECT: FINANCIAL MANAGEMENT
(19COU10)

FINANCIAL MANAGEMENT
UNIT – III

I . NI approach

II. NOI approach

II. Net Income Approach

2. Jennifer Ltd. Is expecting an annual EBIT of Rs. 200000. the company has Rs. 200000 in 10 % debentures. The equity capitalisation rate (ke) is 12 %. You are required to ascertained the total value of the firm and overall cost of capital. What happens if the company borrows Rs. 200000 at 10% to repay equity capital ?

Solution

Value of firm under NI Approach = Market value of equity + Market value of debt

Calculation of Market value of equity

Particulars	Rs
Earning before interest and tax (EBIT)	2,00,000
Less : Interest (2,00,000 x 10 %)	40,000
Earning available to equity shareholders	1,60,000

Market value of equity = 1,60,000/12 %

= Rs.13,33,333

ii. Calculation value of the firm

Value of firm under NI Approach = Market value of equity + Market value of debt

= 13,33,333 + 4,00,000

= 17,33,333.

iii. Calculation of Overall cost of capital (Ko)
= EBIT / Value of the firm x 100

= 2,00,000 / 17,33,333 x 100

= 11.54 %

An analysis : Under this net approach, increase in debt content leads to increase in value of firm and decrease in overall cost of capital.

II. Net Operating Income Approach

3. Dewey Ltd. Has debt has an EBIT of Rs. 4,50,000. The cost of debt is 10% and the outstanding debt is Rs. 12,00,000. The overall capitalisation rate (Ko0 is 15 %. Calculate the total value of the firm and equity capitalisation rate under NOI approach.

Solution

Calculation of Market value of firm.

Market Value of firm = EBIT /OVERALL COST OF CAPITAL (Ko) x 100

= 4,50,000 /15%

= Rs. 30,00,000

Calculation of Market value of Equity

Market Value of firm = Market Value of equity + Market value of debt

Market Value of Equity = Market value of firm – Market value of debt

= 30,00,000 – 12,00,000

= Rs. 18,00,000

Calculation of earnings available to equity shareholders

Particulars	Rs
Earning before interest and tax (EBIT)	4,50,000
Less : Interest (12,00,000 x 10 %)	1,20,000
Earning available to equity shareholders	3,30,000

Calculation of equity capitalization rate (Ke)

Ke = Earnings available to equity shareholders / Market value of equity x 100

= 3,30,000 / 18,00,000 x 100   = 18.33 %

NI and NOI approach

Company A and company B are in the same risk class and identical. In all respects that company A uses Debt. While company B does not. Levered company has Rs. 20 Lakh debentures. Carrying 12% rate of interest .Both companies earn 20 % before interest and taxes on their total assetss of Rs.50 lakh. Assume perfect capital markets, tax rate of 50 % And Capitalisation rate of 10% for an equity company. Compute the value of both companies under (a) NI aaproach (b) Net operating Income approach

a.) Calculation value of the firm under NI approach

Value of firm under NI Approach = Market value of equity + Market value of debt

Computation of Market value of equity

Calculation of Market value of equity

Particulars	Company A Rs
Earning before interest and tax (EBIT) (50.00,000 x 20%)	10,00,000
Less : Interest (20,00,000 x 12 %)	2,40,000
EBT	7,60,000
Less : Tax @ 50 %	3,80,000
Earning available to equity shareholders	**3,80,000**

Particulars	Company B Rs ?
Earning before interest and tax (EBIT) (50.00,000 x 20%)	10,00,000
Less : Interest	Nil
EBT	10,00,000
Less : Tax @ 50 %	5,00,000
Earning available to equity shareholders	**5,00,000**

Market Value of Equity = Earnings available to equity shareholders / Cost of Equity(Ke)

Company A = 3,80,000 / 10 %

= 38,00,000

Company B = 5,00,000/ 10 %

= 50,00,000

Computation of Value of Company

Value of Company = Market value of Equity + Market Value of debt

Company A = 38,00,000 + 20,00,000   = 58,00,000

Company B = 50,00,000 + 0   = 50,00,000

Computation of Value of Company Under NOI Approach – A company

Value of Company = Market value of Equity + Market Value of debt

Market value of Equity = EBIT (100%- Tax) / Cost of Equity (Ke)

Market value of Equity = 10,00,000 (100-50%) /10 %

5,00,000 / 10%   = **Rs. 50,00,000**

Market value of Debt = Value of Debt x Tax Rate

        = 20,00,000 x 50%   = Rs. 10,00,000

Therefore Value of Company A = Market Value of Equity + Market Value of Debt

        50,00,000 + 10,00,000 = **60,00,000**

Computation of Value of Company Under NOI Approach – B company

Value of Company = Market value of Equity + Market Value of debt

Market value of Equity = EBIT (100%- Tax) / Cost of Equity (Ke)

Market value of Equity = 10,00,000 (100-50%) /10 %

5,00,000 / 10%   = Rs. **50,00,000**

Therefore Value of Company B = Market Value of Equity + Market Value of Debt

50,00,000 + 0 = **50,00,000**

Kindly type the link to attend the

Questionnaires (MCQ).

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Class: II B.Com. B (2019 Only)

SUBJECT: FINANCIAL MANAGEMENT (19COU10)

FINANCIAL MANAGEMENT
UNIT – III

I. NOI approach

II. Traditional Approach

2. Abinaya company Ltd. expresses a net operating income of Rs. 2,00,000. It has Rs. 8,00,000 to 7% debentures. The overall capitalization rate is 10%.

(a) Calculate the value of the firm and the equity capitalization rate (or) cost of equity according to the net operating income approach.

(b) If the debenture debt is increased to Rs. 12,00,000. What will be the effect on the value of the firm, the equity capitalization rate?

Solution

(a) Net operating income = Rs. 2,00,000
Over all cost of capital = 10%

Market value of the firm (V) = NOI(EBIT) / Overall cost of capital(OK)

= 2,00,000/10 %   = 2,00,000×100/10
= Rs. 20,00,000

Market value of firm = Rs. 20,00,000

Less Market value of debentures = Rs.   8,00,000

Total marketing value of equity = Rs. 12,00,000

Equity capitalization rate (or) cost of equity (Ke)

= EBIT - I / V - D

= 2,00,000 - 56,000 / 20,00,000 - 8,00,000 ×100

= 1,44,000 / 12,00,000 × 100

= **12%**

where
I = Interest of debt
V = Value of the firm
D = Value of debt capital

EBIT = **2,00,000**

Interest = 8,00,000 x 7/100

= 56,000

V (Value of the firm is = **20,00,000**

D (Debt) **= 8,00,000**

If the debenture debt is increased at Rs. 12,00,000, the value of the firm shall changed to Rs. 20,00,000.
Equity Capitalization Rate (Ke)

$$= EBIT - I \ / \ V - D$$

$$= 2,00,000 - 84,000 / \ 20,00,000 - 12,00,000$$

$$= 14.5\%$$

Where
I= 12,00,000 at 7% **= 84,000**

Traditional Approach

Traditional Approach It is the mix of Net Income approach and Net Operating Income approach. Hence, it is also called as intermediate approach. According to the traditional approach, mix of debt and equity capital can increase the value of the firm by reducing overall cost of capital up to certain level of debt. Traditional approach states that the Ko decreases only within the responsible limit of financial leverage and when reaching the minimum level, it starts increasing with financial leverage.

Assumptions Capital structure theories are based on certain assumption to analysis in a single and convenient manner:
• There are only two sources of funds used by a firm; debt and shares.
• The firm pays 100% of its earning as dividend.
• The total assets are given and do not change.
• The total finance remains constant.
• The operating profits (EBIT) are not expected to grow.
• The business risk remains constant.
• The firm has a perpetual life.
• The investors behave rationally.

1. ABC Ltd., needs Rs. 30,00,000 for the installation of a new factory. The new factory expects to yield annual earnings before interest and tax (EBIT) of Rs.5,00,000. In choosing a financial plan, ABC Ltd., has an objective of maximizing earnings per share (EPS). The company proposes to issuing ordinary shares and raising debit of Rs. **3,00,000 and Rs. 10,00,000 of Rs. 15,00,000**. The current market price per share is Rs. 250 and is expected to drop to Rs. 200 if the funds are borrowed in excess of Rs. 12,00,000. Funds can be raised at the following rates.

–up to Rs. 3,00,000 at 8%
–over Rs. 3,00,000 to Rs. 15,000,00 at 10%
–over Rs. 15,00,000 at 15%
Assuming a tax rate of 50% advise the company.

Solution

Earnings Before Interest and Tax (BIT)
less Interest Earnings Before Tax
less: Tax@50%.

Earning per share =

Alternative II and III   ?

Alternatives
 I (Rs. 3,00,000 debt)
 II (Rs. 10,00,000 debt
 III)) (Rs. 15,00,000 debt)

Alternative II
Earnings Before Interest and Tax (BIT)   = 5,00,000
 less Interest Earnings Before Tax   = 1,00,000
  (1000000 x 10 %)

                                             = 4,00,000
less: Tax@50%.   = 2,00,000
           EAT   **= 2,00,000**

Alternative I
Earnings Before Interest and Tax (BIT)   = 5,00,000
 less Interest Earnings Before Tax   = 24,000
  (300000 x 8 %)

                                             = 4,76,000
less: Tax@50%.   = 2,38,000
                                             = 2,38,000

installation of a new factory - Raising Debit =
30,00,000 - 10,00,000 = 20,00,000
No of shares = 20,00,000/250
= 8000

installation of a new factory - Raising Debit = 30,00,000 - 3,00,000

Earnings / no of shares
2380000/10800   = 27,00,000

EPS = 200000/8000 = 25

Earning per share = 22.03 no of shares= 27,00,000 / 250 = 10,800

Alternative III

Earnings Before Interest and Tax (BIT)   = 5,00,000
 less Interest Earnings Before Tax   = 2,25,000
   (1500000 x 15 %)

                                              = 2,75,000
less: Tax@50%.   = 1,37,500
EAT   **=1,37,500**

       installation of a new factory - Raising Debit =
       30,00,000 - 15,00,000 = 15,00,000
       No of shares = 15,00,000/200
       =7,500

          EPS = 137500/7500 = 18.3

Kindly type the link to attend the

 Questionnaires (MCQ).

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Class: II B.Com. B (2019 Only)

SUBJECT: FINANCIAL MANAGEMENT (19COU10)

FINANCIAL MANAGEMENT
UNIT – III

I. Traditional Approach

II. Modigliani and Miller Approach

2. Compute the market value of the firm, value of shares and the average cost of capital from the following information.

Net operating income Rs. 1,00,000
Total investment Rs. 5,00,000

Equity capitalization Rate:
(a) If the firm uses no debt 10%
(b) If the firm uses Rs. 2,50,000 debentures 11%
(c) If the firm uses Rs. 4,00,000 debentures 13%

Assume that Rs. 5,00,000 debentures can be raised at 6% rate of interest whereas Rs. 4,00,000 debentures can be raised at 7% rate of interest.

Solution

Computation of market value of firm value of shares and the average cost of capital.

Particulars	(a) No Debt	(b) Rs. 2,50,000 6% debentures	(c) Rs. 4,00,000 7% debentures
Net operating system	1,00,000	1,00,000	1,00,000
(–) Interest (i.e.)			
Cost of debt	–	15,000	28,000
Earnings available to Equity shareholders	1,00,000	85,000	72,000
Equity Capitalization Rate	10%	11%	13%
Market value of shares	1,00,000 X 100/10	$85,000 \times \dfrac{100}{11}$	$72,000 \times \dfrac{100}{13}$
Market Value of firm	Rs. 10,00,000/- 10,00,000 1,00,000	Rs.772727/- 10,22,727 1,00,000	Rs.553846/- 9,53,846 1,00,000
Average cost of capital	$\dfrac{1,00,000}{10,00,000} \times 100$	$\dfrac{1,00,000}{10,22,727} \times 100$	$\dfrac{1,00,000}{9,53,846} \times 100$
$\dfrac{Earnings}{Value\ of\ the\ firm}$			
$\dfrac{EBIT}{V}$	=10%	=9.78%	=10.48%

1,00,000 / 10 %
=1,00,000 / 10/100

=100000X 100/10

Comments From the above data, if debt of Rs. 2,50,000 is used, the value of the firm increases and the overall cost of capital decreases. But, if more debt is used to finance in place of equity i.e., Rs. 4,00,000 debentures, the value of the firm decreases and the overall cost of capital increases.

Modigliani and Miller Approach

Modigliani and Miller approach states that the financing decision of a firm does not affect the market value of a firm in a perfect capital market. In other words MM approach maintains that the average cost of capital does not change with change in the debt weighted equity mix or capital structures of the firm.

Modigliani and Miller approach is based on the following important assumptions:
• There is a perfect capital market.
• There are no retained earnings.
• There are no corporate taxes.
• The investors act rationally.
• The dividend payout ratio is 100%.
• The business consists of the same level of business risk.

Value of the firm can be calculated with the help of the following formula:

$$\frac{EBIT}{K_o}(1-t)$$

Where

EBIT = Earnings before interest and tax

K_o = Overall cost of capital

t = Tax rate

1. There are two firms 'A' and 'B' which are exactly identical except that A does not use any debt in its financing, while B has Rs. 2,50,000 , 6% Debentures in its financing. Both the firms have earnings before interest and tax of Rs. 75,000 and the equity capitalization rate is 10%. Assuming the corporation tax is 50%, calculate the value of the firm.

Solution

The market value of firm A which does not use any debt.

$$\frac{EBIT}{K_o}(1-t)$$

$$V_u = \frac{EBIT}{K_o}$$

$$= \frac{75,000}{10/100} = 75,000 \times 100/10$$

$$= Rs.\ 7,50,000$$

The market value of firm B which uses debt financing of Rs. 2,50,000

$$V_t = V_u + t$$

$$V_u = 7,50,000, \qquad t = 50\%\ of\ Rs.\ 2,50,000$$

$$= 7,50,000 + 1,25,000$$

$$= Rs.\ 8,75,000$$

2.Two Firms R and S are identical expect in the method of financing. Firm R has no debt, while firm S has Rs. 3,00,000 8% debentures in financing. Both the firms have a net operating income (EBIT) of Rs. 1,20,000 and equity capitalization rate of 12%. The corporate tax rate is 35 %. Calculate the value of the firm using MM approach.

Computation of value of firm R which does not use any debt (Unlevered)

i. Computation of Value of firm = Earnings available to equity shareholders / Equity capitalization rate

= EAT / Ke

EBIT	=	1,20,000
Less Interest		Nil
EBT		1,20,000
Less : Income Tax @35 %		42,000
EAT		**78,000**

VALUE OF THE FIRM IS = 78,000 / 12 %

VALUE OF THE FIRM IS = Rs. 6,50,000

Computation of value of firm S which does not use any debt (levered) ?

Value of the firm S = Vu +tax Rate x Debt)
=650000 + (0.35 x 300000)
= Rs. 7,50,000

8

Kindly type the link to attend the

 Questionnaires (MCQ).

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Class: II B.Com. B (2019 Only)

SUBJECT: FINANCIAL MANAGEMENT (19COU10)

FINANCIAL MANAGEMENT
UNIT – III

I. **CAPITALIZATION**

INTRODUCTION

Financial planning and decision play a major role in the field of financial management which consists of the major area of financial management such as, capitalization, financial structure, capital structure, leverage and financial forecasting.

Financial planning includes the following important parts:

● Estimating the amount of capital to be raised.

● Determining the form and proportionate amount of securities.

● Formulating policies to manage the financial plan.

MEANING OF CAPITAL

The term capital refers to the total investment of the company in terms of money, and assets. It is also called as total wealth of the company. When the company is going to invest large amount of finance into the business, it is called as capital.

Capital is the initial and integral part of new and existing business concern. The capital requirements of the business concern may be classified into two categories:

(a) Fixed capital
(b) Working capital.

Character of Fixed Capital

● Fixed capital is used to acquire the fixed assets of the business concern.

● Fixed capital meets the capital expenditure of the business concern.

● Fixed capital normally consists of long period.

● Fixed capital expenditure is of nonrecurring nature.

● Fixed capital can be raised only with the help of long-term sources of finance.

Working Capital

According to the definition of Bonneville, "any acquisition of funds which increases the current assets increase the Working Capital also for they are one and the same".

Working capital is needed to meet the following purpose:

Working capital is needed to meet the following purpose:

● Purchase of raw material

● Payment of wages to workers

● Payment of day-to-day expenses

● Maintenance expenditure etc.

Position of Capital
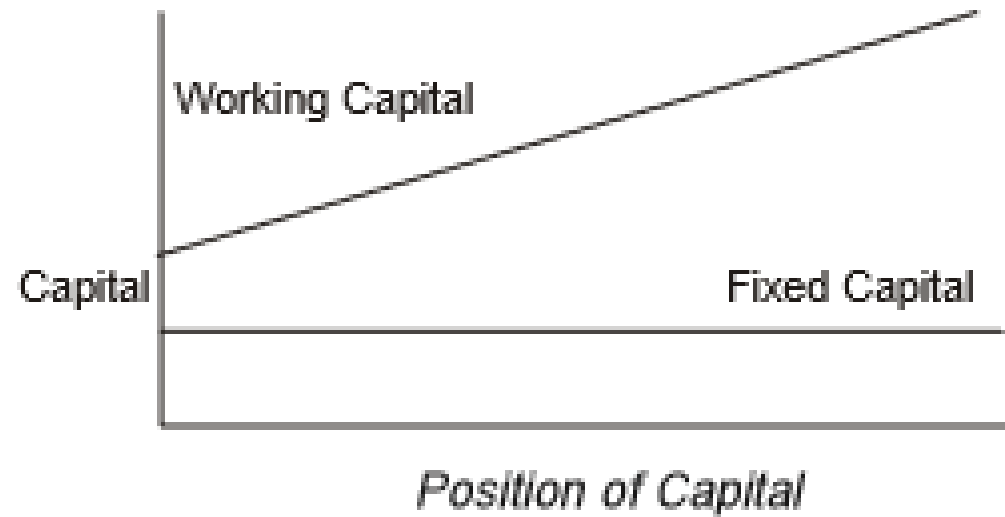
CAPITALIZATION

Capitalization is related to the total amount of capital employed in the business concern.

Meaning of Capitalization

Capitalization refers to the process of determining the quantum of funds that a firm needs to run its business. Capitalization is only the par value of share capital and debenture and it does not include reserve and surplus.

Definition of Capitalization

According to Guthman and Dougall, "capitalization is the sum of the par value of stocks and bonds outstanding". "Capitalization is the balance sheet value of stocks and bonds outstands". —Bonneville and Dewey

According to Arhur. S. Dewing, "capitalization is the sum total of the par value of all shares".

TYPES OF CAPITALIZATION

Capitalization may be classified into the following three important types based on its nature:

• Over Capitalization

• Under Capitalization

• Water Capitalization

Causes of Over Capitalization Over capitalization arise due to the following important causes:

• Over issue of capital by the company.

• Borrowing large amount of capital at a higher rate of interest.

• Providing inadequate depreciation to the fixed assets.

• Excessive payment for acquisition of goodwill.

• High rate of taxation.

• Under estimation of capitalization rate.

Effects of Over Capitalization Over capitalization leads to the following important effects:

• Reduce the rate of earning capacity of the shares.

• Difficulties in obtaining necessary capital to the business concern.

• It leads to fall in the market price of the shares.

• It creates problems on re-organization.

• It leads under or misutilisation of available resources.

Remedies for Over Capitalization Over capitalization can be reduced with the help

of effective management and systematic design of the capital structure.

The following are the major steps to reduce over capitalization.

• Efficient management can reduce over capitalization.

• Redemption of preference share capital which consists of high rate of dividend.

• Reorganization of equity share capital.

• Reduction of debt capital.

Kindly type the link to attend the

Questionnaires (MCQ).

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Class: II B.Com. B (2019 Only)

SUBJECT: FINANCIAL MANAGEMENT (19COU10)

FINANCIAL MANAGEMENT
UNIT – III

I. Types of CAPITALIZATION

Under Capitalization

Under capitalization is the opposite concept of over capitalization and it will occur when the company's actual capitalization is lower than the capitalization as warranted by its earning capacity. Under capitalization is not the so called inadequate capital.

Under capitalization can be defined by Gerstenberg, "a corporation may be under capitalized when the rate of profit is exceptionally high in the same industry".

Hoagland defined under capitalization as "an excess of true assets value over the aggregate of stocks and bonds outstanding".

Causes of Under Capitalization

Under capitalization arises due to the following important causes:

• Under estimation of capital requirements.

• Under estimation of initial and future earnings.

• Maintaining high standards of efficiency.

• Conservative dividend policy.

• Desire of control and trading on equity.

Effects of Under Capitalization

Under Capitalization leads certain effects in the company and its shareholders.

• It leads to manipulate the market value of shares.

• It increases the marketability of the shares.

• It may lead to more government control and higher taxation.

• Consumers feel that they are exploited by the company.

• It leads to high competition.

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Remedies of Under Capitalization

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Under Capitalization may be corrected by taking the following remedial measures:

1. Under capitalization can be compensated with the help of fresh issue of shares.

2. Increasing the par value of share may help to reduce under capitalization.

3. Under capitalization may be corrected by the issue of bonus shares to the existing shareholders.

4. Reducing the dividend per share by way of splitting up of shares.

Watered Capitalization

If the stock or capital of the company is not mentioned by assets of equivalent value, it is called as watered stock. In simple words, watered capital means that the realizable value of assets of the company is less than its book value.

According to **Hoagland's** definition, "A stock is said to be watered when its true value is less than its book value."

Causes of Watered Capital

Generally watered capital arises at the time of incorporation of a company but it also arises during the life time of the business. The following are the main causes of watered capital:

1. Acquiring the assets of the company at high price.

2. Adopting ineffective depreciation policy.

3. Worthless intangible assets are purchased at higher price.

Kindly type the link to attend the

 Questionnaires (MCQ).

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Class: II B.Com. B (2019 Only)

SUBJECT: FINANCIAL MANAGEMENT (19COU10)

1

FINANCIAL MANAGEMENT
UNIT – IV

- **I. COST OF CAPITAL**

  Cost of Debt

Cost of Perpetual Debt and Redeemable Debt

It is the rate of return which the lenders expect. The debt carries a certain rate of interest.

$$Kdb = \frac{p\,I + 1/n(P - Np)}{\tfrac{1}{2}(P + Np)}$$

Where,
I = Annual interest payable
P = Par value of debt
Np = Net proceeds of the debenture
n = Number of years to maturity
Kdb = Cost of debt before tax.

Cost of debt after tax can be calculated with the help of the following formula:

$$Kda = Kdb \times (1 - t)$$

Where,
Kda = Cost of debt after tax
Kdb = Cost of debt before tax
t = Tax rate

2. A company issues Rs. 20,00,000, 10% redeemable debentures at a discount of 5%. The costs of floatation amount to Rs. 50,000. The debentures are redeemable after 8 years. Calculate before tax and after tax. Cost of debt assuring a tax rate of 55%.

Solution

$$Kdb = \frac{p\,I + \ 1/n(P - Np)}{\frac{1}{2}\,(P + Np)}$$

Where,
I = Annual interest payable
P = Par value of debt
Np = Net proceeds of the debenture
n = Number of years to maturity
Kdb = Cost of debt before tax.

$$= \frac{20,00,000 + 1/8(20,00,000 - 18,50,000)}{1\,/\,2\,(20,00,000 + 18,50,000)}$$

Note ; Np = 20,00,000 – 10,00,000 – 50,000

$$= \frac{2,00,000 + 18750}{19,25,000} \qquad = 11.36\%.$$

4

After Tax Cost of Debt Kd

$= Kda (1-t)$

$=11.36 (1-0.55)$

$=5.11\%.$

3. A company issues Rs. 10,00,000, 10% redeemable debentures at a discount of 5%. The costs of floatation amount to Rs. 30,000. The debentures are redeemable after 5 years. Calculate before tax and after tax. Cost of debt assuring a tax rate of 50%.

Solution

$$Kdb = \frac{pI + 1/n(P - Np)}{½ (P + Np)}$$

Where,
I = Annual interest payable
P = Par value of debt
Np = Net proceeds of the debenture
n = Number of years to maturity
Kdb = Cost of debt before tax.

Note ; P = 10,00,000

I = 10 %

P = 10,00,000

Discount = 50,000

9,50,000

Less:

Floatation = 30,000

9,20,000

$$= \frac{1,00,000 + 1/5 (10,00,000 - 9,20,000)}{1/2 (10,00,000 + 9,20,000)}$$

$$= \frac{1,00,000 + 1/5 (80,000)}{½ (10,20,000)}$$

Redeemable debenture 9,20,000 10 / 100 = 92,000

6

$$= \frac{1,00,000 + 16,000}{9,60,000}$$

$$= \frac{1,16,000}{9,60,000}$$

$= 12.08\%.$

After Tax Cost of Debt Kd

Kda = Kdb (1–t)

=12.08 (1–0.50)

=6.04 %.

3. i. X ltd., issues Rs. 50,000, 8% debentures of Rs. 1 each at a premium of 10% the cost of floatation are 2 % the rate of tax applicable to the company 60% compute the cost of debt capital.

ii. The company issues 5000 12 % debt of Rs. 100 each at a discount of 5 % . The commission payable to underwriters and local is Rs. 25,000. the debt are redeemable after 5 years. Compute the after tax cost of debt assuming a tax rate3 of 50%.

Solution

i.) Kda = I /NP (1-t)

Np = 50,000 + (50000 x 10%) =55000

Np = 55000 – 1000 =54000   floatation (50000 x2/100) I = 4000 (50000 x 8/100)

= 4000 / 54000 x (1-60%)

= 0.074 x 0.4

= 0.029

= 2.96 %

Cost of Debt before tax

$$Kdb = \frac{p\,I + 1/n(P - Np)}{\frac{1}{2}(P + Np)}$$

Where,
I = Annual interest payable
P = Par value of debt
Np = Net proceeds of the debenture
n = Number of years to maturity
Kdb = Cost of debt before tax.

Note ; P   = 5000 x 100
                = 5,00,000
P   = 5,00,000
Discount 5% = 25000 -25000
                   4,50,000

$$= \frac{60,000 + 1/5\,(5,00,000 - 4,50,000)}{1/2\,(5,00,000 + 4,50,000)}$$

$$= \frac{60,000 + 1/5\,(50,000)}{9,25,000 / 2}$$

= 0.14 x 100
= 14.73 %.

I = 5,00,000 x 12 %
   =60000

9

After Tax Cost of Debt Kd

$$= Kda\ (1{-}t)$$

$$=14.78\ (1{-}0.50)$$

$$=7.37\ \%.$$

III. **Cost of Preference Share Capital**

Cost of preference share capital is the annual preference share dividend by the net proceeds from the sale of preference share. There are two types of preference shares irredeemable and redeemable. Cost of redeemable preference share capital is calculated with the help of the following formula:

$$Kp = Dp\ /\ Np$$

Where,
Kp = Cost of preference share Dp = Fixed preference dividend
Np = Net proceeds of an equity share

10

Cost of irredeemable preference share is calculated with the help of the following formula:

$$Kpr = \frac{D + (MV - N\,P/n)}{\frac{1}{2}\,(MV + Np)}$$

Where ,
MV = Maturity Value of preference share
D = Annual Preference dividend
Np = Net proceeds (net value)
n = No. of years

1. XYZ Ltd. issues 20,000, 8% preference shares of Rs. 100 each. Cost of issue is Rs. 2 per share. Calculate cost of preference share capital if these shares are issued (a) at par, (b) at a premium of 10% and (c) of a discount of 6%.

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Cost of preference share capital

At par : $Kp = Dp / Np$

(a) $Kp = 1,60,000 / 20,00,000 - 40,000 \times 100$

$= 8.16\%$

(b) At premium

$Kp = 1,60,000 / 20,00,000 + 2,00,000 - 40,000 \times 100$

$= 7.40\%$

At Discount

c.) $Kp = 1,60,000 / 20,00,000 - 1,20,000 - 40,000 \times 100$

$= 1,60,000 / 18,40,000 \times 100$

$= 8.69\%$

$P = 20000 \times 100 = 20,00,000$

$20,00,000 \times 2 / 100 (cost) = 40,000$

$Np = P - cost = 20,00,000 - 40,000 =$

$16,00,000$

$D = 20,00,000 \times 8 / 100$

$= 1,60,000.$

Premium is 10 %

$20,00,000 \times 10 / 100$

$= 2,00,000$

Discount is 6 %

$20,00,000 \times 6 / 100$

$= 1,20,000$

12

1. A company . issues 10,000, **10% preference** shares of Rs. 100 each. Cost of issue is Rs. 2 per share. Calculate cost of preference share capital if these shares are issued (a) at par, (b) at a premium of 10% and (c) of a discount of 5%.

Cost of preference share capital

At par : $Kp = Dp / Np$

(a) $Kp = 1,00,000 / 9,80,000 \times 100$

= 10.20 %

(b) At premium

$Kp = 1,00,000 / 10,00,000 + 1,00,000 - 20,000 \times 100$
    $= 0.092 \times 100$
    = 9.25 %

P = 10000 x 100 = 10,00,000

10,00,000 x 2/ 100 (cost) = 20,000

Np = P – cost = 10,00,000 – 20,000 =

9,80,000

D= 10,00,000 x 10 /100

= 1,00,000.

Premium is 10 %

10,00,000 x 10/100

= 1,00,000

13

At Discount

c.) Kp = 1,00,000 / 10,00,000 -50,000 - 20,000 ×100

= 1,00,000 / 9,30,000 ×100

= 0.107 x 100

= 10.75 %

Discount is 5 %

10,00,000 x 5/100

= 50,000

1. ABC Ltd. issues 20,000, 8% preference shares of Rs. 100 each. Redeemable after 8 years at a premium of 10%. The cost of issue is Rs. 2 per share. Calculate the cost of preference share capital.

Solution

$$Kpr = \frac{D + MV - NP / n}{\frac{1}{2}(MV + NP)}$$

% where

$Dp = 20,000 \times 100 \times 8\%$
$= 1,60,000$

$P = 20,00,000 + 2,00,000 = 22,00,00$

$Np = 20,00,000 - 40,000 = 19,60,000$

$n = 8$ years

$$= \frac{1,60,000 + 1/8 \ (22,00,00 - 19,60,000)}{1/2(22,00,000 + 19,60,000)}$$

$$= \frac{1,60,000 + 30,000}{20,80,000}$$

= 9.13 %

15

2. ABC Ltd. issues 20,000, 8% preference shares of Rs. 100 each at a premium of 5% redeemable after 8 years at par. The cost of issue is Rs. 2 per share. Calculate the cost of preference share capital.

Solution

$$Kpr = \frac{D + MV - NP / n}{½ (MV + NP)}$$

$$= \frac{1,60,000 \; 1/8 \; (20,00,000 - 20,60,000)}{1/2(20,00,000 + 20,60,000)}$$

$$= \frac{1,60,000 - 7,500}{20,30,000}$$

$$= 7.51\%$$

where
Dp = 20,000×100×8% =1,60,000

P = 20,00,000
 n = 8 years

Np = 20,00,000 + 1,00,000 – 40,000
   =20,60,000

Cost of Retained Earnings

Retained earnings is one of the sources of finance for investment proposal; it is different from other sources like debt, equity and preference shares. Cost of retained earnings is the same as the cost of an equivalent fully subscripted issue of additional shares, which is measured by the cost of equity capital. Cost of retained earnings can be calculated with the help of the following formula:

$$Kr = Ke\ (1 - t)\ (1 - b)$$

Where,
Kr = Cost of retained earnings
Ke = Cost of equity
t = Tax rate
b = Brokerage cost

17

1. A firm's Ke (return available to shareholders) is 10%, the average tax rate of shareholders is 50% and it is expected that 2% is brokerage cost that shareholders will have to pay while investing their dividends in alternative securities. What is the cost of retained earnings?

Solution

Cost of Retained Earnings, Kr = Ke (1 – t) (1 – b)
Where,
Ke = rate of return available to shareholders
t = tax rate
b = brokerage cost So,

Kr = 10% (1–0.5) (1–0.02)

= 10%×0.5×0.98 = 0.049 x 100
= 4.9%

2. A firm's Ke (return available to shareholders) is 20%, the average tax rate of shareholders is 22% and it is expected that 3% is brokerage cost that shareholders will have to pay while investing their dividends in alternative securities. What is the cost of retained earnings?

Solution

Cost of Retained Earnings, Kr = Ke (1 – t) (1 – b)
Where,
Ke = rate of return available to shareholders
t = tax rate
b = brokerage cost So,

Kr = 20% (1–0.22) (1–0.03)

= 20%×0.78×0.97 = 0.15132 x 100
= 15.132 %

3. A firm's Ke (return available to shareholders) is 15%, the average tax rate of shareholders is 40% and it is expected that 2% is brokerage cost that shareholders will have to pay while investing their dividends in alternative securities. What is the cost of retained earnings?

Solution

Cost of Retained Earnings, $Kr = Ke (1 – t) (1 – b)$
Where,
Ke = rate of return available to shareholders
t = tax rate
b = brokerage cost So,

$Kr = 15\% (1–0.4) (1–0.02)$

$= 15\% \times 0.6 \times 0.98 = 0.0882 \times 100$
= 8.82%

Measurement of Overall

Measurement of Overall Cost of Capital It is **also called as weighted average cost of capital and composite cost of capital.** Weighted average cost of capital is the expected average future cost of funds over the long run found by weighting the cost of each specific type of capital by its proportion in the firms capital structure. The computation of the overall cost of capital (Ko) involves the following steps.

(a) Assigning weights to specific costs.

(b) Multiplying the cost of each of the sources by the appropriate weights.

(c) Dividing the total weighted cost by the total weights. The overall cost of capital can be calculated with the help of the following formula;

$$Ko = K_d W_d + K_p W_p + K_e W_e + K_r W_r$$

Where,

Ko = Overall cost of capital

Kd = Cost of debt

Kp = Cost of preference share

Ke = Cost of equity

Kr = Cost of retained earnings

Wd= Percentage of debt of total capital

Wp = Percentage of preference share to total capital

We = Percentage of equity to total capital

Wr = Percentage of retained earnings

Weighted average cost of capital is calculated in the following formula also:

$$KW = \frac{\Sigma XW}{\Sigma W}$$

Where,

Kw = Weighted average cost of capital

X = Cost of specific sources of finance

W = Weight, proportion of specific sources of finance.

1. A firm has the following capital structure and after-tax costs for the different sources of funds used :

Source of Funds	Book Value	Market Value	Specific Costs (%) Rs.
Debt	4,00,000	3,80,000	5
Preference	1,00,000	1,10,000	8
Equity	6,00,000	9,00,000	15
Retained Earnings	2,00,000	3,00,000	13

You are required to compute the weighted average cost of capital.

Determine the weighted average cost of capital using:

(a) Book value weights, and (b) Market value weights. How are they different? Can you think of a

situation where the weighted average cost of capital would be the same using either of the weights?

$$KW = \frac{\Sigma XW}{\Sigma W}$$

Solution

Computation of Weighted Average Cost of Capital

B. Market Value

Kw = 2,01,800 / 16,90,000 × 100

= 11.9%

Source of Funds	Market Value	Specific Costs (%) Rs.	Weighted Cost of Proportion
Debt	3,80,000	5	19,000
Preference	1,10,000	8	8,800
Equity	9,00,000	15	135000
Retained Earnings	3,00,000	13	39000
	ΣW16,90,000		ΣXW 2,01,800

$$KW = \frac{\Sigma XW}{\Sigma W}$$

Kw = 1,44,000 / 13,00,000 × 100

= 11.1%

Solution

Computation of Weighted Average Cost of Capital

Market Value ?

B. Market Value

Source of Funds	Book Value	Specific Costs (%) Rs.	Weighted Cost of Proportion
Debt	4,00,000	5	20,000
Preference	1,00,000	8	8,000
Equity	6,00,000	15	90,000
Retained Earnings	2,00,000	13	26,000
	ΣW 13,00,000		ΣXW 1,44,000

2. A firm has the following capital structure and after-tax costs for the different sources of funds used :

Source of Funds	Cost of Capital %	Book Value	Market Value
Equity	18	0.50	0.58
Preference	15	0.20	0.17
Long term debt	7	0.30	0.25

Calculate the weighted Average cost of capital using book value and market value rate.

Source of Funds	Book Value	After tax cost	Weighted Average Capital
Equity	0.50	0.18	9.00
Preference	0.20	0.15	3.00
Long term debt	0.30	0.07	2.10

14.1

market value rate.

Source of Funds	Market Value	After tax cost	Weighted Average Capital
Equity	0.58	0.18	10.44
Preference	0.17	0.15	2.55
Long term debt	0.25	0.07	1.75

14.74

3. ABC Ltd. has the following capital structure.

Equity (expected dividend 12%) 10,00,000

10% preference 5,00,000

8% loan 15,00,000 Y

You are required to calculate the weighted average cost of capital, assuming 50% as the rate of income-tax, before and after tax.

Solution

Showing weighted average cost of capital: Particulars Rs. After Weights

Source of Funds	Rs	After	Weighted	Cost
Equity	10,00,000	12 %	33.33 %	3.99 %
Preference	5,00,000	10 %	16.67 %	1.67 %
8 % Loan	15,00,000	4 %	50.00%	2.00 %
	30,00,000			7.66 %

29

Dividend policy

INTRODUCTION

The financial manager must take careful decisions on how the profit should be distributed among shareholders. It is very important and crucial part of the business concern, because these **decisions are directly related** with the **value of the business concern and shareholder's wealth.** Like financing decision and investment decision, dividend decision is also a major part of the financial manager. When the business concerns decide dividend policy, they have to consider certain factors such as retained earnings and the nature of shareholder of the business concern.

Meaning of Dividend

Dividend refers to the business concerns net profits distributed among the shareholders. It may also be termed as the part of the profit of a business concern, which is distributed among its shareholders. According to the Institute of Chartered Accountant of India, dividend is defined as "a distribution to shareholders out of profits or reserves available for this purpose".

30

TYPES OF DIVIDEND/FORM OF DIVIDEND

Dividend may be distributed among the shareholders in the form of cash or stock. Hence, Dividends are classified into:

A. Cash dividend

B. Stock dividend

C. Bond dividend

D. Property dividend

Cash Dividend

If the dividend is paid in the form of cash to the shareholders, it is called cash dividend. It is paid periodically out the business concerns EAIT (Earnings after interest and tax). Cash dividends are common and popular types followed by majority of the business concerns.

Stock Dividend

Stock dividend is paid in the form of the company stock due to raising of more finance. Under this type, cash is retained by the business concern. Stock dividend may be bonus issue. This issue is given only to the existing shareholders of the business concern.

Bond Dividend

Bond dividend is also known as script dividend. If the company does not have sufficient funds to pay cash dividend, the company promises to pay the shareholder at a future specific date with the help of issue of bond or notes.

Property Dividend

Property dividends are paid in the form of some assets other than cash. It will distributed under the exceptional circumstance. This type of dividend is not published in India.

Dividend Theories

Irrelevance of Dividend

Solomon Approach

MM Approach

Relevance of Dividend

Walters Model

Gordon's Model

Dividend Theories

Irrelevance of Dividend

Solomon Approach

MM Approach

Relevance of Dividend

Walters Model

Gordon's Model

Irrelevance of Dividend According to professors Soloman, Modigliani and Miller, dividend policy has no effect on the share price of the company. There is no relation between the dividend rate and value of the firm. Dividend decision is irrelevant of the value of the firm. Modigliani and Miller contributed a major approach to prove the irrelevance dividend concept.

Modigliani and Miller's Approach According to MM, under a perfect market condition, the dividend policy of the company is irrelevant and it does not affect the value of the firm. "Under conditions of perfect market, rational investors, absence of tax discrimination between dividend income and capital appreciation, given the firm's investment policy, its dividend policy may have no influence on the market price of shares".

Assumptions

MM approach is based on the following important assumptions:

1. Perfect capital market.

2. Investors are rational.

3. There are no tax.

4. The firm has fixed investment policy.

5. No risk or uncertainty.

Proof for MM approach MM approach can be proved with the help of the following formula:

$$P_o = D_1 + P_1 / (1+K_e)$$

Where,

P_o = Prevailing market price of a share.

K_e = Cost of equity capital.

D_1 = Dividend to be received at the end of period one.

P_1 = Market price of the share at the end of period one.

Criticism of MM approach
- MM approach consists of certain criticisms also. The following are the major criticisms of MM approach.

- MM approach assumes that tax does not exist. It is not applicable in the practical life of the firm.

- MM approach assumes that, there is no risk and uncertain of the investment. It is also not applicable in present day business life.

- MM approach does not consider floatation cost and transaction cost. It leads to affect the value of the firm.

- MM approach considers only single decrement rate, it does not exist in real practice.

- MM approach assumes that, investor behaves rationally. But we cannot give assurance that all the investors will behave rationally.

RELEVANCE OF DIVIDEND

According to this concept, dividend policy is considered to affect the value of the firm. Dividend relevance implies that shareholders prefer current dividend and there is no direct relationship between dividend policy and value of the firm. Relevance of dividend concept is supported by two eminent persons like Walter and Gordon.

37

Walter's Model Prof. James E. Walter argues that the dividend policy almost always affects the value of the firm.

Walter model is based in the relationship between the following important factors:

• Rate of return I

• Cost of capital (k)

According to the Walter's model, if r > k, the firm is able to earn more than what the shareholders could by reinvesting, if the earnings are paid to them. The implication of r > k is that the shareholders can earn a higher return by investing elsewhere.

If the firm has r = k, it is a matter of indifferent whether earnings are retained or distributed.

Assumptions Walters model is based on the following important assumptions:

1. The firm uses only internal finance.

2. The firm does not use debt or equity finance.

3. The firm has constant return and cost of capital.

4. The firm has 100 recent payout.

5. The firm has constant EPS and dividend.

6. The firm has a very long life. Walter has evolved a mathematical formula for determining the value of market share.

RELEVANCE OF DIVIDEND

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5. The firm has constant EPS and dividend.

6. The firm has a very long life. Walter has evolved a mathematical formula for determining the value of market share.

Criticism of Gordon's Model

Gordon's model consists of the following important criticisms:

Gordon model assumes that there is no debt and equity finance used by the firm. It is not applicable to present day business.

Ke and r cannot be constant in the real practice.

According to Gordon's model, there are no tax paid by the firm. It is not practically applicable.

FACTORS DETERMINING DIVIDEND POLICY

Profitable Position of the Firm

Dividend decision depends on the profitable position of the business concern. When the firm earns more profit, they can distribute more dividends to the shareholders.

Uncertainty of Future Income

Future income is a very important factor, which affects the dividend policy. When the shareholder needs regular income, the firm should maintain regular dividend policy.

Legal Constrains

The Companies Act 1956 has put several restrictions regarding payments and declaration of dividends. Similarly, Income Tax Act, 1961 also lays down certain restrictions on payment of dividends.

Liquidity Position

Liquidity position of the firms leads to easy payments of dividend. If the firms have high liquidity, the firms can provide cash dividend otherwise, they have to pay stock dividend.

Sources of Finance

If the firm has finance sources, it will be easy to mobilize large finance. The firm shall not go for retained earnings.

Growth Rate of the Firm

High growth rate implies that the firm can distribute more dividend to its shareholders.

HICAS

Kindly type the link to attend the Questionnaires (MCQ).

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Class: II B.Com. B (2019 Only)

SUBJECT: FINANCIAL MANAGEMENT (19COU10)

FINANCIAL MANAGEMENT
UNIT – IV

I. COST OF CAPITAL

INTRODUCTION

- Cost of capital is an integral part of investment decision

- It is used to measure the worth of investment proposal provided by the business concern.

- It is used as a discount rate in determining the present value of future cash flows associated with capital projects.

- Cost of capital is also called as cut-off rate, target rate, hurdle rate and required rate of return.

- It is closely associated with the value of the firm and the earning capacity of the firm.

Meaning of Cost of Capital

- Cost of capital is the rate of return that a firm must earn on its project investments to maintain its market value and attract funds.

- Cost of capital is the required rate of return on its investments which belongs to equity, debt and retained earnings. If a firm fails to earn return at the expected rate, the market value of the shares will fall and it will result in the reduction of overall wealth of the shareholders.

Definitions

- According to the definition of John J. Hampton " Cost of capital is the rate of return the firm required from investment in order to increase the value of the firm in the market place".

- According to the definition of Solomon Ezra, "Cost of capital is the minimum required rate of earnings or the cut-off rate of capital expenditure".

Assumption of Cost of Capital

1. It is not a cost as such. It is merely a hurdle rate.
2. It is the minimum rate of return.
3. It consist of three important risks such as zero risk level, business risk and financial risk.

Cost of capital can be measured with the help of the following equation.

$$K = r_j + b + f.$$

Where,
 K = Cost of capital.
rj = The riskless cost of the particular type of finance.
b = The business risk premium.
f = The financial risk premium.

CLASSIFICATION OF COST OF CAPITAL

Cost of capital may be classified into the following types on the basis of nature and usage:

• Explicit and Implicit Cost.

• Average and Marginal Cost.

• Historical and Future Cost.

• Specific and Combined Cost.

Explicit and Implicit Cost

• The cost of capital may be explicit or implicit cost on the basis of the computation of cost of capital. Explicit cost is the rate that the firm pays to procure financing.

Average and Marginal Cost

- Average cost of capital is the weighted average cost of each component of capital employed by the company. It considers weighted average cost of all kinds of financing such as equity, debt, retained earnings etc. Marginal cost is the weighted average cost of new finance raised by the company. It is the additional cost of capital when the company goes for further raising of finance.

Historical and Future Cost

- Historical cost is the cost which as already been incurred for financing a particular project. It is based on the actual cost incurred in the previous project. Future cost is the expected cost of financing in the proposed project. Expected cost is calculated on the basis of previous experience.

Specific and Combine Cost

- The cost of each sources of capital such as equity, debt, retained earnings and loans is called as specific cost of capital. It is very useful to determine the each and every specific source of capital. The composite or combined cost of capital is the combination of all sources of capital. It is also called as overall cost of capital. It is used to understand the total cost associated with the total finance of the firm.

IMPORTANCE OF COST OF CAPITAL

- Importance to Capital Budgeting Decision

- Importance to Evolution of Financial Performance

- Importance to Structure Decision

- Importance to Other Financial Decisions

- Performance of top Management

- Other area of decision Making

Components of Capital

- Return at Zero Risk

- Premium for Business Risk

- Premium for Financial Risk

Factors Determining the Cost of Capitl

General Economics Conditions

Market Conditions

Operating and Financial Decisions

Amount of Financing

COMPUTATION OF COST OF CAPITAL

Computation of cost of capital consists of two important parts:

Measurement of specific costs

Measurement of overall cost of capital

Measurement of specific costs

Cost of equity

Cost of debt

Cost of preference share

Cost of retained earnings

Measurement of overall cost of capital

It is also called as **weighted average cost of capital** and **composite cost of capital**. Weighted average cost of capital is the expected average future cost of funds over the long run found by weighting the cost of each specific type of capital by its proportion in the firms capital structure.

The computation of the overall cost of capital (Ko) involves the following steps.

(a) Assigning weights to specific costs.

(b) Multiplying the cost of each of the sources by the appropriate weights.

(c) Dividing the total weighted cost by the total weights.

IMPORTANCE OF COST OF CAPITAL

Computation of cost of capital is a very important part of the financial management to decide the capital structure of the business concern.

- Importance to Capital Budgeting Decision

- Importance to Structure Decision

- Maximization of the value of the firm

- Performance of top Management

- Importance to Evolution of Financial Performance

- Other area of decision Making

Components of Capital

- Return at Zero Risk

- Premium for Business Risk

- Premium for Financial Risk

- It talks about the expected rate of return when a project involves no financial or business risks.

- Business risk is determined by the capital budgeting decisions that a firm takes for its investment proposals. So, if a firm selects a project that has more than normal risk, then it is obvious that the providers of capital would require or demand a higher rate of return than the normal rate.

- Financial risk is associated with the capital structure pattern of the firm. Here, the premium finds its way to the picture depending on the volume of debts the firm owes.

Factors Determining the Cost of Capital

General Economics Conditions

Market Conditions

Operating and Financial Decisions

Amount of Financing

- If banks are growing, they can easily give loan at low rate of interest because they need to increase the sale for stability of their products. At that time, company's cost of debt will decrease which is the part of company's cost of capital. Not just bank but whole economic conditions should be ok for this.

- When we have studied optimal capital structure, we have to study the cost of capital because for optimal capital structure, we need to calculate weighted average cost of capital. But if company did not consider cost of capital as factor, we can include the study of current capital structure as the factor for cost of capital.

- When we get new share capital or debt, we have to tell to fund providers about the usage of their fund. If there is more risk in the investment, both shareholders and creditors will get high reward for this. So, our financial and investment decisions will effect the cost of capital.

- we charge the interest before tax charges. When we earn money, we deduct our interest charges, then we deduct tax charges. So, if tax rate will high, it will effect the cost of share capital because with high tax charges, our net earn will decrease and it will decrease earning per share.

COMPUTATION OF COST OF CAPITAL

Computation of cost of capital consists of two important parts:

Measurement of specific costs

Measurement of overall cost of capital

(I) Measurement of Specific Cost of Capital

It refers to the computation of cost related to each specific source of finance like:

- Cost of equity capital (K_e)
- Cost of debt/debenture capital (K_d)
- Cost of preference share capital (K_p)
- Cost of retained earnings (K_r)

COMPUTATION OF COST OF CAPITAL

Computation of cost of capital consists of two important parts:

Measurement of specific costs

Measurement of overall cost of capital

Measurement of specific costs

Cost of equity

Cost of equity capital is the rate at which investors discount the expected dividends of the firm to determine its share value.

Conceptually the cost of equity capital (Ke) defined as the "Minimum rate of return that a firm must earn on the equity financed portion of an investment project in order to leave unchanged the market price of the shares".

Cost of equity can be calculated from the following approach:
• Dividend price (D/P) approach
• Dividend price plus growth (D/P + g) approach
• Earning price (E/P) approach
• Realized yield approach.

Cost of debt

Cost of debt is the after tax cost of long-term funds through borrowing. Debt may be issued at par, at premium or at discount and also it may be perpetual or redeemable.

Cost of retained earnings

Retained earnings is one of the sources of finance for investment proposal; it is different from other sources like debt, equity and preference shares. Cost of retained earnings is the same as the cost of an equivalent fully subscripted issue of additional shares, which is measured by the cost of equity capital.

Cost of preference share
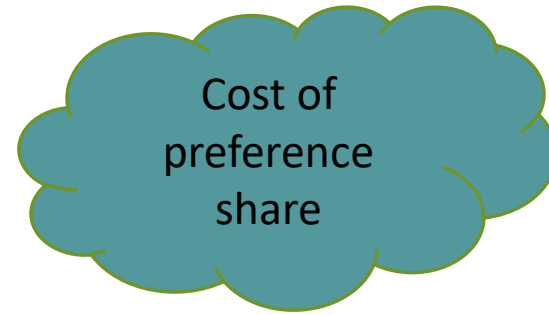
Cost of preference share capital is the annual preference share dividend by the net proceeds from the sale of preference share. There are two types of preference shares irredeemable and redeemable

Measurement of overall cost of capital

It is also called as **weighted average cost of capital** and **composite cost of capital**. Weighted average cost of capital is the expected average future cost of funds over the long run found by weighting the cost of each specific type of capital by its proportion in the firms capital structure.

The computation of the overall cost of capital (Ko) involves the following steps.

(a) Assigning weights to specific costs.

(b) Multiplying the cost of each of the sources by the appropriate weights.

(c) Dividing the total weighted cost by the total weights.

The overall cost of capital can be calculated with the help of the following formula;

$$Ko = K_d W_d + K_p W_p + K_e W_e + K_r W_r$$

Where,
Ko = Overall cost of capital
Kd = Cost of debt
Kp = Cost of preference share
Ke = Cost of equity
Kr = Cost of retained earnings
Wd= Percentage of debt of total capital
Wp = Percentage of preference share to total capital
We = Percentage of equity to total capital
Wr = Percentage of retained earnings

Cost of equity can be calculated from the following approach:
• Dividend price (D/P) approach
• Dividend price plus growth (D/P + g) approach
• Earning price (E/P) approach
• Realized yield approach.

Dividend price (D/P) approach

The cost of equity capital will be that rate of expected dividend which will maintain the present market price of equity shares.
Dividend price approach can be measured with the help of the following formula:

Where,
$$Ke = D / N p$$

Ke = Cost of equity capital
D   = Dividend per equity share
Np = Net proceeds of an equity share

1. A company issues 10,000 equity shares of Rs. 100 each at a premium of 10%. The company has been paying 25% dividend to equity shareholders for the past five years and expects to maintain the same in the future also. Compute the cost of equity capital. Will it make any difference if the market price of equity share is Rs. 175?

Solution

$$Ke = D / N p$$

$$= 25 / 110 \times 100$$

$$= 22.72\%$$

N p = 100 Price + 10 Premium = 110

N p = 100 x 10/100 = 110

If the market price of a equity share is Rs. 175.

$$K e = D / M p$$

$$= 25 / 175 \times 100$$

$$= 14.28\%$$

2. A company issues 1,000 equity shares of Rs. 100 each at a premium of 10%. That company has been paying 20% dividend to equity shareholders for the past five years and expects to maintain his same in the future also. Compute the cost of equity capital.

Will it make any difference of market price of equity share is Rs. 160 ?

Solution

$$Ke = D / N p \qquad OR \qquad Ke = D / M p$$

$$= 20 / 110 \times 100$$

N p = 100 Price + 10 Premium = 110

$$= 18. 18 \%$$

If the market price of a equity share is Rs. 160.

$$K e = D / M p$$

$$= 25 / 160 \times 100$$

$$= 12.5\%$$

Dividend price plus growth (D/P + g) approach

The cost of equity is calculated on the basis of the expected dividend rate per share plus growth in dividend. It can be measured with the help of the following formula:

$$Ke = D / N p + G$$

Where,

Ke = Cost of equity capital

D = Dividend per equity share

g = Growth in expected dividend

Np = Net proceeds of an equity share

1. (a) A company plans to issue 10000 new shares of Rs. 100 each at a par. The floatation costs are expected to be 4% of the share price. The company pays a dividend of Rs. 12 per share initially and growth in dividends is expected to be 5%. Compute the cost of new issue of equity shares.

(b) If the current market price of an equity share is Rs. 120. Calculate the cost of existing equity share capital

Solution   Ke = D / N p+g

= 0.125 + 0.05 x 100

= 0.175 x100

17.5%   or

$$= \frac{12}{100 - 4} + 5/100$$

= 12.5 + 5 = 17.5%

NP= 100

Flotation = 100 x 4/100

= 4

= 100-4 = 96

D = 12

If the current market price of an equity share is Rs. 120

Ke = D / M p + g

= 12 / 120 +5%

=15%

= 0.1 + 0.05 x 100

= 0.15 x100

15 %

or

2. The current market price of the shares of A Ltd. is Rs. 95. The floatation costs are Rs. 5 per share amounts to Rs. 4.50 and is expected to grow at a rate of 7%. You are required to calculate the cost of equity share capital.

Solution

Ke   = D / N p+g

Market price Rs. 95

Dividend Rs. 4.50

= 4.50 /95 x 100 +7 %

Growth 7%.

= 4.73 %

Earning Price Approach

Cost of equity determines the market price of the shares. It is based on the future earning prospects of the equity. The formula for calculating the cost of equity according to this approach is as follows.

$$Ke = EPS / Np$$

Where,

Ke = Cost of equity capital

EPS = Earning per share

Np = Net proceeds of an equity share

1. A firm is considering an expenditure of Rs. 75 lakhs for expanding its operations. The relevant information is as follows :

Number of existing equity shares =10 lakhs

Market value of existing share =Rs.100

Net earnings =Rs.100 lakhs

Compute the cost of existing equity share capital and of new equity capital assuming that new shares will be issued at a price of Rs. 92 per share and the costs of new issue will be Rs. 2 per share.

Cost of existing equity share capital:

Solution   Ke = EPS / Mp   Earnings Per Share(EPS) = Net earnings /No of equity shares

Earnings Per Share(EPS) = 100 lakhs / 10 lakhs   = Rs.10

Ke = 10 / 100 × 100

= 10%

Cost of Equity Capital new issues

Earnings Per Share(EPS) = 100 lakhs / 10 lakhs
= Rs. 10

$$Ke = EPS / Np$$

$$= 10 / \ 92 - 2 \times 100$$

$$= 11.11\%$$

Issued Market price   **= 92**
Less Cost of New issue **= 2**
                                     = 90

2. A firm is considering an expenditure of Rs. 6 lakhs for expanding its operations. The relevant information is as follows :

Number of existing equity shares =10 lakhs

Market value of existing share =Rs.60

Net earnings =Rs.90 lakhs

Compute the cost of existing equity share capital and of new equity capital assuming that new shares will be issued at a price of Rs. 52 per share and the costs of new issue will be Rs. 2 per share.

Cost of existing equity share capital:

Solution

Ke = EPS / Mp

Ke = 9 / 60 × 100

= 15%

Earnings Per Share(EPS) = Net earnings /No of equity shares

Earnings Per Share(EPS) = 90 lakhs / 10 lakhs
                        = Rs. 9

Cost of Equity Capital new issues

Earnings Per Share(EPS) = 90 lakhs / 10 lakhs
= Rs. 9

$$Ke = EPS / Np$$

Issued Market price	**= 52**
Less Cost of New issue	**= 2**
	= 50

= 9 / 52 – 2 × 100

= 18 %

Realized Yield Approach

It is the easy method for calculating cost of equity capital. Under this method, cost of equity is calculated on the basis of return actually realized by the investor in a company on their equity capital.

$$K_e = PV_f \times D$$

Where,

Ke = Cost of equity capital. PVf = Present value of discount factor.

D = Dividend per share.

Cost of Debt

Cost of debt is the after tax cost of long-term funds through borrowing. Debt may be issued at par, at premium or at discount and also it may be perpetual or redeemable.

Debt Issued at Par Debt issued at par means, debt is issued at the face value of the debt. It may be calculated with the help of the following formula

Kd = (1 – t) R

Where,

Kd = Cost of debt capital

t = Tax rate

R = Debenture interest rate

Debt Issued at Premium or Discount If the debt is issued at premium or discount, the cost of debt is calculated with the help of the following formula.
 Kd = I / Np (1 – t)

Where,
Kd = Cost of debt capital
I = Annual interest payable
Np = Net proceeds of debenture
t = Tax rate

Cost of Debt

Cost of debt is the after tax cost of long-term funds through borrowing. Debt may be issued at par, at premium or at discount and also it may be perpetual or redeemable.

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 Kd = I / Np (1 – t)

Where,
Kd = Cost of debt capital
I = Annual interest payable
Np = Net proceeds of debenture
t = Tax rate

Debt Issued at Premium or Discount

(a) A Ltd. issues Rs. 1,00,000, 8% debentures at par. The tax rate applicable to the company is 50%. Compute the cost of debt capital.

(b) B Ltd. issues Rs. 1,00,000, 8% debentures at a premium of 10%. The tax rate applicable to the company is 60%. Compute the cost of debt capital.

(c) A Ltd. issues Rs. 1,00,000, 8% debentures at a discount of 5%. The tax rate is 60%, compute the cost of debt capital.

(d) B Ltd. issues Rs. 1,00,000, 9% debentures at a premium of 10%. The costs of floatation are 2%. The tax rate applicable is 50%.

Compute the cost of debt-capital. In all cases, we have computed the after-tax cost of debt as the firm saves on account of tax by using debt as a source of finance.

Solution

(a)

$Kda = I / Np (1–t)$

$= 8,000 /1,00,000 × (1 – 0.5)$

$= 8,000 / 1,00,000 × 0.5$

$= 0.08 × 0.5 = 0.04 × 100$

$= 4\%$

$I = 10,00,00 × 8/100$
$= 8000$

(b) Np = Face Value + Premium = 1,00,000+10,000=1,10,000

$$= 8,000 / 1,10,000 \times (1 - 0.6)$$

$Kda = I / Np (1–t)$

$$= 8,000 / 1,10,000 \times 0.4$$

$$= 0.072 \times 0.4 = 0.0290 \times 100$$

$$= 2.91\%$$

(c) Np = Face Value – Discount = 1,00,000-5,000=95,000

$Kda = I / Np (1–t)$

$$= 8,000 / 95,000 \times (1 - 0.6)$$

$$= 3.37\%$$

(d) $Kda = I / Np (1 - t),$

$$= 9000 / 1,07,800 \times (1 - 0.5)$$

$$= 0.0834 \times 0.5 = 0.0417 \times 100$$

$$= 4.17\%$$

$I = 1,00,000 \times 9/100$
$= 9000$

Np= Rs. (1,00,000 + 10,000) x 2/ 100 (Expenses)

$$= 1,10,000 - 2,200$$

$$= Rs. 1,07,800$$

39

Cost of Perpetual Debt and Redeemable Debt

It is the rate of return which the lenders expect. The debt carries a certain rate of interest.

$$Kdb = \frac{p\,I + \frac{1}{n}(P - Np)}{\frac{1}{2}(P + Np)}$$

Where,
I = Annual interest payable
P = Par value of debt
Np = Net proceeds of the debenture
n = Number of years to maturity
Kdb = Cost of debt before tax.

Cost of debt after tax can be calculated with the help of the following formula:

$$Kda = Kdb \times (1 - t)$$

Where,
Kda = Cost of debt after tax
Kdb = Cost of debt before tax
t = Tax rate

A company issues Rs. 20,00,000, 10% redeemable debentures at a discount of 5%. The costs of floatation amount to Rs. 50,000. The debentures are redeemable after 8 years. Calculate before tax and after tax. Cost of debt assuring a tax rate of 55%.

Solution

$$Kdb = \frac{p\ I + \ 1/n(P - Np\ )}{\frac{1}{2}\ (P+ Np\ )}$$

Where,
I = Annual interest payable
P = Par value of debt
Np = Net proceeds of the debenture
n = Number of years to maturity
Kdb = Cost of debt before tax.

$$= \frac{20,00,000 + 1/8(20,00,000 - 18,50,000)}{1/2\ (20,00,000 + 18,50,000)}$$

$$= \frac{20,00,000 + 18750}{19,25,000} \qquad = 11.36\%.$$

After Tax Cost of Debt Kd

Kda = Kdb (1–t)

=11.36 x (1–0.55)

=5.11%.

Note ; Np = 20,00,000 – 10,00,00 – 50,000
Discount 20,00,000 x 5 /100 =100000 +50000
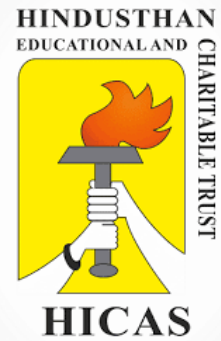
Class: II B.Com. B (2019 Only)

SUBJECT: FINANCIAL MANAGEMENT (19COU10)

1

FINANCIAL MANAGEMENT
UNIT – V

- WORKING CAPITAL MANAGEMENT

INTRODUCTION

Working capital management is also one of the important parts of the financial management. It is concerned with short-term finance of the business concern

which is a closely related trade between profitability and liquidity.

Efficient working capital management leads to improve the operating performance of the business concern and it helps to meet the short term liquidity.
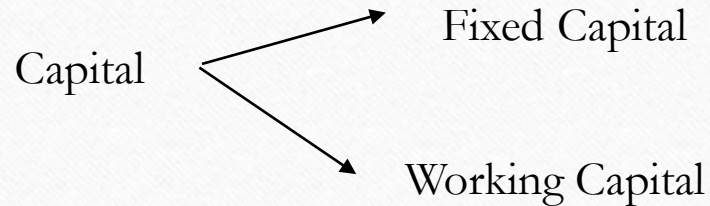
Working capital is described as the capital which is not fixed but the more common uses of the working capital is to consider it as the difference between the book value of current assets and current liabilities.

This chapter deals with the following important aspects of the working capital management.

- Meaning of Working Capital
- Types of Working Capital
- Factors determining Working Capital
- Sources of Working Capital
- Working Capital and Banking Committee

- Concept of Working Capital
- Needs of Working Capital
- Computation of Working Capital
- Working Capital Management Policy

3

MEANING OF WORKING CAPITAL

Capital of the concern may be divided into two major headings.

Capital → Fixed Capital

Capital → Working Capital

Fixed capital means that capital, which is used for long-term investment of the business concern. For example, purchase of permanent assets. Normally it consists of non-recurring in nature.

Working Capital is another part of the capital which is needed for meeting day to day requirement of the business concern. For example, payment to creditors, salary paid to workers, purchase of raw materials etc., normally it consists of recurring in nature. It can be easily converted into cash. Hence, it is also known as short-term capital.
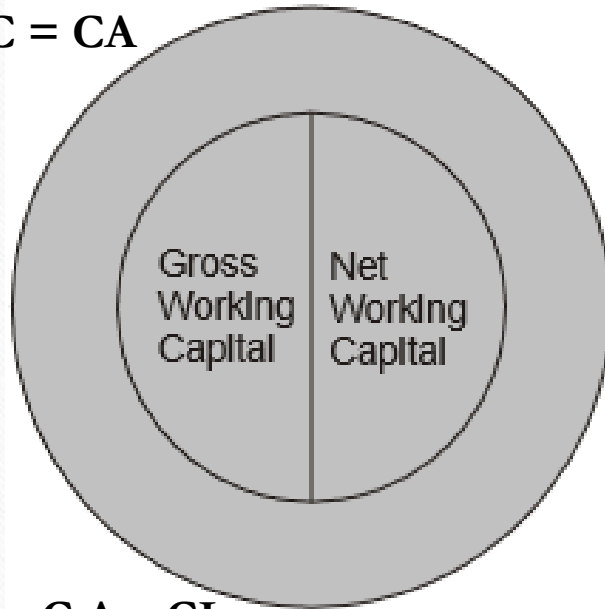
Definitions

According to the definition of Mead, Baker and Malott, "Working Capital means Current Assets".

According to the definition of J.S.Mill, "The sum of the current asset is the working capital of a business".

CONCEPT OF WORKING CAPITAL

Working capital can be classified or understood with the help of the following two important concepts.

GWC = CA

NWC = C A – CL

Gross Working Capital
Gross Working Capital is the general concept which determines the working capital concept. Thus, the gross working capital is the capital invested in total current assets of the business concern. Gross Working Capital is simply called as the total current assets of the concern.
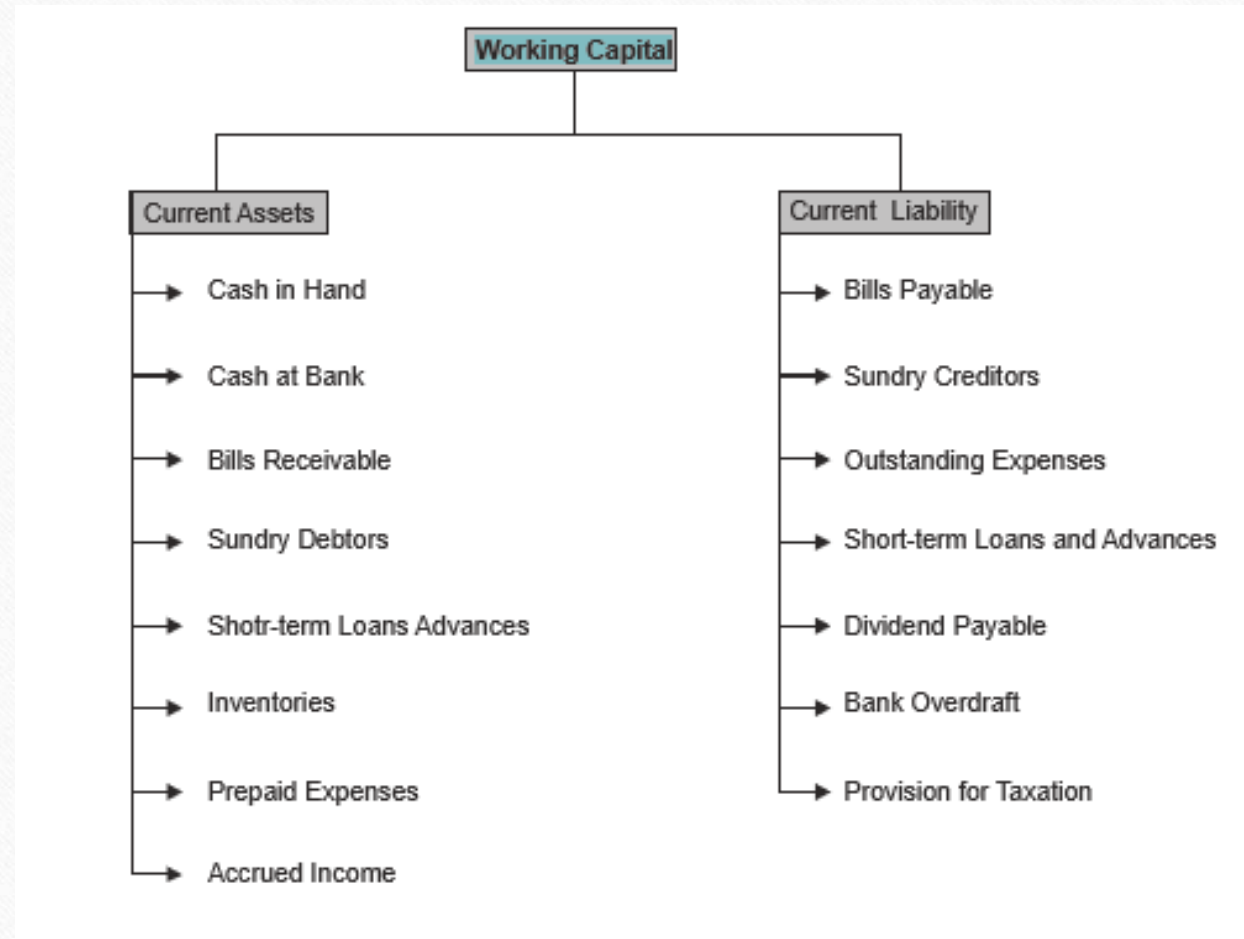
Net Working Capital
Net Working Capital is the specific concept, which, considers both current assets and current liability of the concern. Net Working Capital is the excess of current assets over the current liability of the concern during a particular period.
If the current assets exceed the current liabilities it is said to be positive working capital; it is reverse, it is said to be Negative working capital.

Component of Working Capital

Working capital constitutes various current assets and current liabilities. This can be illustrated by the following chart.

HINDUSTHAN
EDUCATIONAL AND CHARITABLE TRUST
HICAS

Types of Working Capital

Working Capital may be classified into three important types on the basis of time.

Working Capital

Permanent Working Capital
➤ Regular
➤ Reserve Margin or Cushion

Temporary Working Capital
➤ Seasonal Working Capital
➤ Special Working Capital

Semi Variable Working Capital

7

Permanent Working Capital

It is also known as Fixed Working Capital. It is the capital; the business concern must maintain certain amount of capital at minimum level at all times. The level of Permanent Capital depends upon the nature of the business. Permanent or Fixed Working Capital will not change irrespective of time or volume of sales.
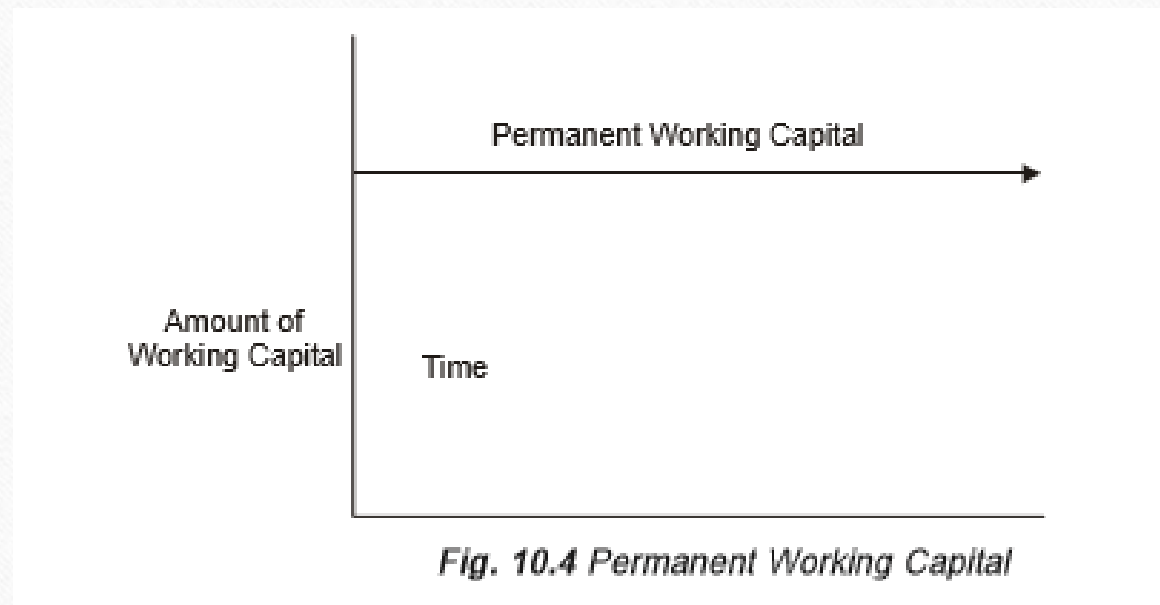

Fig. 10.4 Permanent Working Capital

Temporary Working Capital

It is also known as variable working capital. It is the amount of capital which is required to meet the Seasonal demands and some special purposes. It can be further classified into Seasonal Working Capital and Special Working Capital. The capital required to meet the seasonal needs of the business concern is called as Seasonal Working Capital. The capital required to meet the special exigencies such as launching of extensive marketing campaigns for conducting research, etc.

Fig. 10.5 Temporary Working Capital
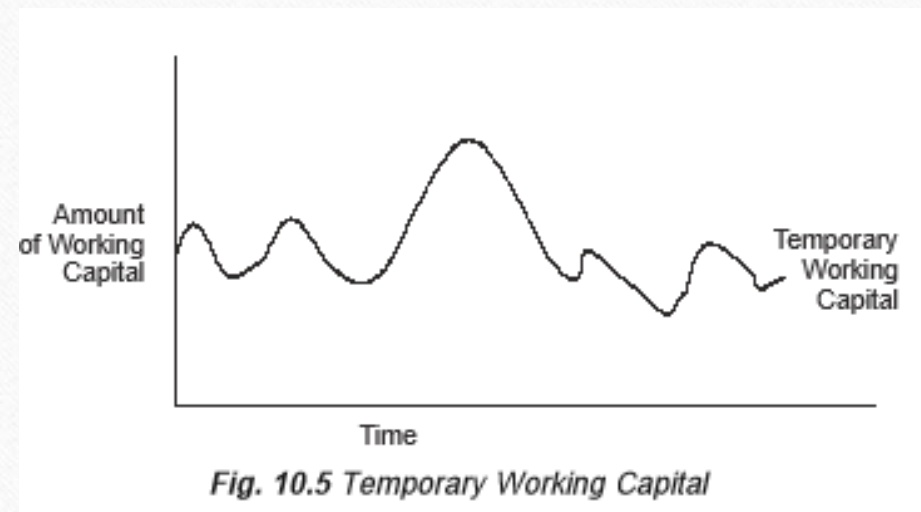
Semi Variable Working Capital

Certain amount of Working Capital is in the field level up to a certain stage and after that it will increase depending upon the change of sales or time.
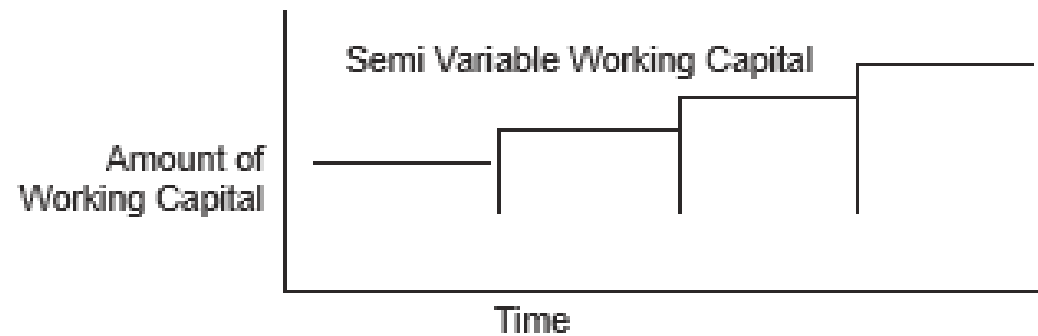

Fig. 10.6 Semi Variable Working Capital

NEEDS FOR WORKING CAPITAL

Working Capital is an essential part of the business concern. Every business concern must maintain certain amount of Working Capital for their day-to-day requirements and meet the short-term obligations. Working Capital is needed for the following purposes.

1. **Purchase of raw materials and spares:** The basic part of manufacturing process is, raw materials. It should purchase frequently according to the needs of the business concern. Hence, every business concern maintains certain amount as Working Capital to purchase raw materials, components, spares, etc.

2. **Payment of wages and salary:** The next part of Working Capital is payment of wages and salaries to labour and employees. Periodical payment facilities make employees perfect in their work. So a business concern maintains adequate the amount of working capital to make the payment of wages and salaries

3. Day-to-day expenses: A business concern has to meet various expenditures regarding the operations at daily basis like fuel, power, office expenses, etc.

4. Provide credit obligations: A business concern responsible to provide credit facilities to the customer and meet the short-term obligation. So the concern must provide adequate Working Capital.

<p style="text-align:center; color:red;">Advantages of adequate working capital</p>

i.   Cash discount

ii.   Sense of security and confidence

iii.   Credit worthiness

iv.   Continuous supply of raw materials

v.   Exploitation

vi. Increase in productivity

vii. Attractive dividend

viii. Meeting unforeseen contingencies

Dangers of redundant or excessive working capital

i. Ineffective management

ii. Increased capital expenditure

iii. Over capitalization

iv. Lower return on capital employed

v. Misapplication of funds

vi. Destruction of turnover ratios

vii. Liquidity Vs profitability

Working Capital Position/ Balanced Working Capital Position.

A business concern must maintain a sound Working Capital position to improve the efficiency of business operation and efficient management of finance. Both excessive and inadequate Working Capital lead to some problems in the business concern.

A. Causes and effects of excessive working capital.

(i)   Excessive Working Capital leads to unnecessary accumulation of raw materials, components and spares.

(ii) Excessive Working Capital results in locking up of excess Working Capital.

(iii) It creates bad debts, reduces collection periods, etc.

(iv) It leads to reduce the profits.

B. Causes and effects of inadequate working capital

(i) Inadequate working capital cannot buy its requirements in bulk order.

(ii) It becomes difficult to implement operating plans and activate the firm's profit target.

(iii) It becomes impossible to utilize efficiently the fixed assets.

(iv) The rate of return on investments also falls with the shortage of Working Capital.

(v) It reduces the overall operation of the business.

FACTORS DETERMINING WORKING CAPITAL REQUIREMENTS

Working Capital requirements depends upon various factors. There are no set of rules or formula to determine the Working Capital needs of the business concern. The following are the major factors which are determining the Working Capital requirements.
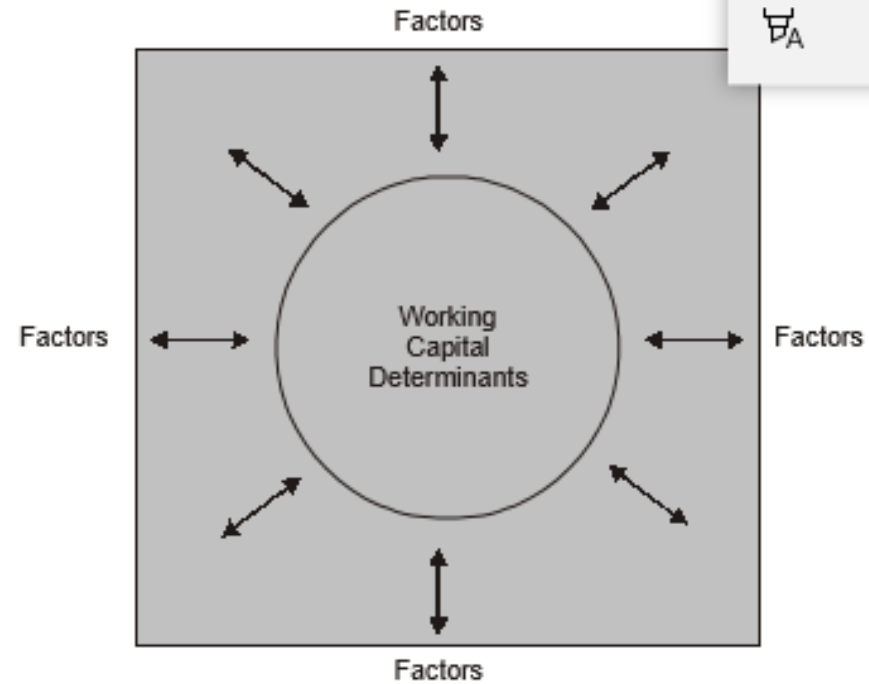

Fig. 10.7 Factors Determining Working Capital Requirements

16

1. Nature of business: Working Capital of the business concerns largely depend upon the nature of the business. If the business concerns follow rigid credit policy and sell goods only for cash, they can maintain lesser amount of Working Capital. A transport company maintains lesser amount of Working Capital while a construction company maintains larger amount of Working Capital.

2. Production cycle: Amount of Working Capital depends upon the length of the production cycle. If the production cycle length is small, they need to maintain lesser amount of Working Capital. If it is not, they have to maintain large amount of Working Capital.

3. Business cycle: Business fluctuations lead to cyclical and seasonal changes in the business condition and it will affect the requirements of the Working Capital. In the booming conditions, the Working Capital requirement is larger and in the depression condition, requirement of Working Capital will reduce. Better business results lead to increase the Working Capital requirements

4. Production policy: It is also one of the factors which affects the Working Capital requirement of the business concern. If the company maintains the continues production policy, there is a need of regular Working Capital. If the production policy of the company depends upon the situation or conditions, Working Capital requirement will depend upon the conditions laid down by the company.

5. Credit policy: Credit policy of sales and purchase also affect the Working Capital requirements of the business concern. If the company maintains liberal credit policy to collect the payments from its customers, they have to maintain more Working Capital. If the company pays the dues on the last date it will create the cash maintenance in hand and bank.

6. Growth and expansion: During the growth and expansion of the business concern, Working Capital requirements are higher, because it needs some additional Working Capital and incurs some extra expenses at the initial stages.

7. Availability of raw materials: Major part of the Working Capital requirements are largely depend on the availability of raw materials. Raw materials are the basic components of the production process. If the raw material is not readily available, it leads to production stoppage. So, the concern must maintain adequate raw material; for that purpose, they have to spend some amount of Working Capital.

8. Earning capacity: If the business concern consists of high level of earning capacity, they can generate more Working Capital, with the help of cash from operation. Earning capacity is also one of the factors which determines the Working Capital requirements of the business concern.

COMPUTATION (OR ESTIMATION) OF WORKING CAPITAL

Working Capital requirement depends upon number of factors, which are already discussed in the previous parts. Now the discussion is on how to calculate the Working Capital needs of the business concern. It may also depend upon various factors but some of the common methods are used to estimate the Working Capital.

A. Estimation of components of working capital method

Working capital consists of various current assets and current liabilities. Hence, we have to estimate how much current assets as inventories required and how much cash required to meet the short term obligations. Finance Manager first estimates the assets and required Working Capital for a particular period.

B. Percent of sales method

Based on the past experience between Sales and Working Capital requirements, a ratio can be determined for estimating the Working Capital requirement in future. It is the simple and tradition method to estimate the Working Capital requirements. Under this method, first we have to find out the sales to Working Capital ratio and based on that we have to estimate Working Capital requirements. This method also expresses the relationship between the Sales and Working Capital.

C. Operating cycle

Working Capital requirements depend upon the operating cycle of the business. The operating cycle begins with the acquisition of raw material and ends with the collection of receivables.

Operating cycle consists of the following important stages:

1. Raw Material and Storage Stage, (R)

2. Work in Process Stage, (W)

3. Finished Goods Stage, (F)

4. Debtors Collection Stage, (D)

5. Creditors Payment Period Stage. (C)

$$O = R + W + F + D - C$$
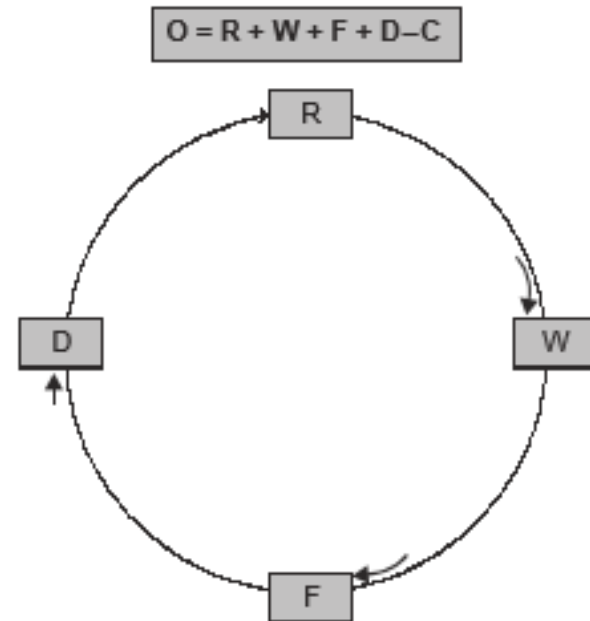
Fig. 10.8 *Working Capital Cycle*

Each component of the operating cycle can be calculated by the following formula:

R=Average Stock of Raw Material / Average Raw Material Consumption Per Day

W=Average Work in Process Inventory / Average Cost of Production Per Day

F=Average Finished Stock Inventory / Average Cost of Goods Sold Per Day

D=Average Book Debts / Average Credit Sales Per Day

C= Average Trade Creditors/ Average Credit Purchase Per Day

WORKING CAPITAL MANAGEMENT POLICY

Working Capital Management formulates policies to manage and handle efficiently; for that purpose, the management established three policies based on the relationship between Sales and Working Capital.

1.   Conservative Working Capital Policy.
2. Moderate Working Capital Policy.
3. Aggressive Working Capital Policy.

1. Conservative working capital policy: Conservative Working Capital Policy refers to minimize risk by maintaining a higher level of Working Capital. This type of Working Capital Policy is suitable to meet the seasonal fluctuation of the manufacturing operation.

2. Moderate working capital policy: Moderate Working Capital Policy refers to the moderate level of Working Capital maintenance according to moderate level of sales. It means one percent of change in Working Capital, that is Working Capital is equal to sales.

24

3. Aggressive working capital policy: Aggressive Working Capital Policy is one of the high risky and profitability policies which maintains low level of Aggressive Working Capital against the high level of sales, in the business concern during a particular period.
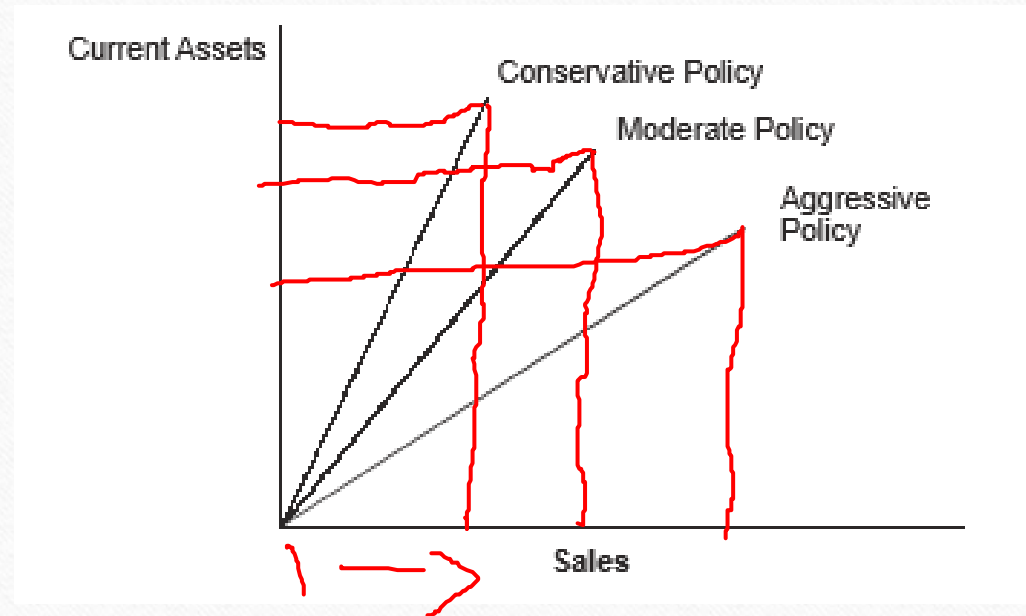
SOURCES OF WORKING CAPITAL

Working Capital requirement can be normalized from short-term and long-term sources. Each source will have both merits and limitations up to certain extract. Uses of Working Capital may be differing from stage to stage.

Sources of Working Capital
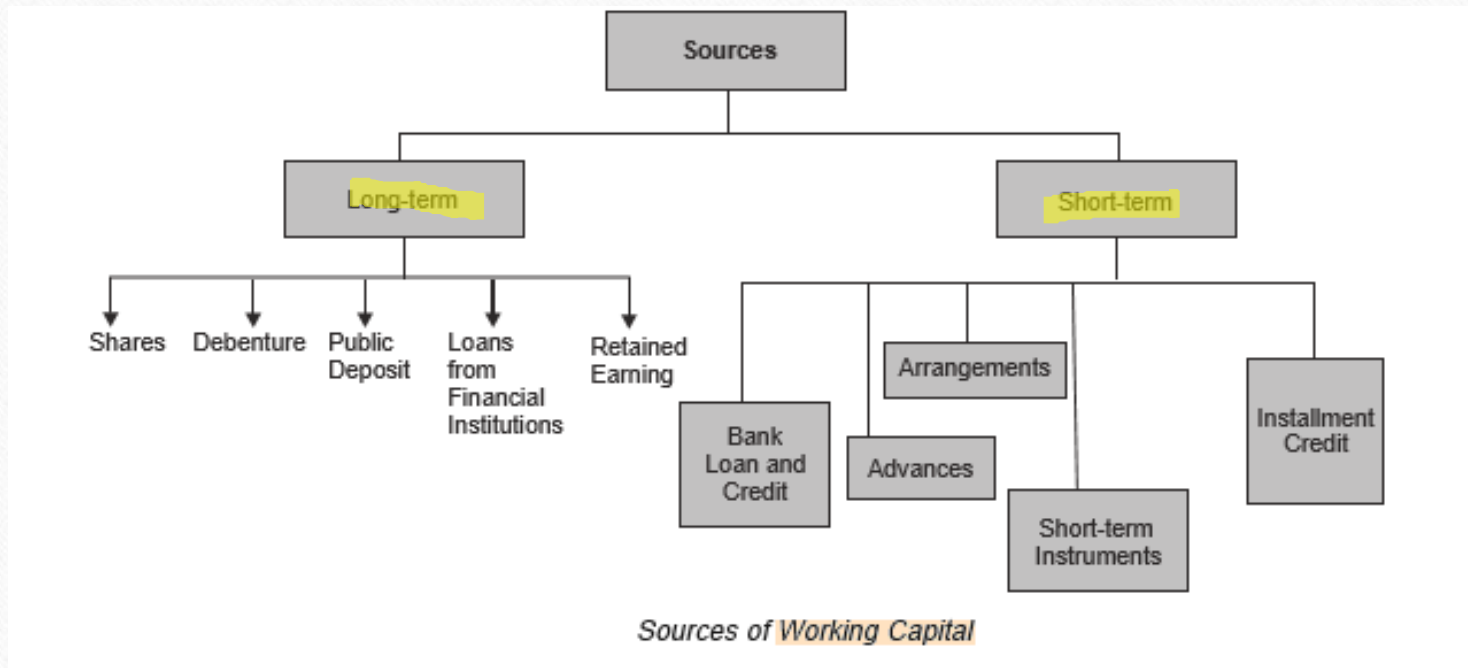
The above sources are also classified into internal sources and external sources of working capital.

Internal sources such as:
• Retained Earnings
• Reserve and Surplus
• Depreciation Funds etc.

External sources such as:
• Debentures and Public Deposits
• Loans from Banks and Financial Institutions
• Advances and Credit
• Financial arrangements like Factoring, etc.

Determining the Finance Mix

Determining the finance mix is an important part of working capital management. Under this decision, the relationship among risk, return and liquidity are measured and also which type of financing is suitable to meet the Working Capital requirements of the business concern. There are three basic approaches for determining an appropriate Working Capital finance mix.

1. Hedging or matching approach
2. Conservative approach
3. Aggressive approach.

27

NEEDS OF WORKING CAPITAL

Working Capital is an essential part of the business concern. Every business concern must maintain certain amount of Working Capital for their day-to-day requirements and meet the short-term obligations. Working Capital is needed for the following purposes.

1. Purchase of raw materials and spares: The basic part of manufacturing process is, raw materials. It should purchase frequently according to the needs of the business concern. Hence, every business concern maintains certain amount as Working Capital to purchase raw materials, components, spares, etc.

2. Payment of wages and salary: The next part of Working Capital is payment of wages and salaries to labour and employees. Periodical payment facilities make employees perfect in their work. So a business concern maintains adequate the amount of working capital to make the payment of wages and salaries.

3. Day-to-day expenses: A business concern has to meet various expenditures regarding the operations at daily basis like fuel, power, office expenses, etc.

4. Provide credit obligations: A business concern responsible to provide credit facilities to the customer and meet the short-term obligation. So the concern must provide adequate Working Capital.

1. From the following information extracted from the books of a manufacturing company , compute the **operating cycle in days :**

Period covered : 365 days

Average period of credit allowed by suppliers : 16 days

Average total debtors outstanding 4,80,000,

Raw material consumption 44,00,000

Total production cost 1,00,00,000

Total cost of sales 1,05,00,000

Sales for the year 1,60,00,000

Value of average stock maintained :

Raw material 3,20,000

Work in Progress 3,50,000

Finished Goods 2,60,000

Statement Sowing Operating Cycle

Particulars	Days
a. Raw material Held in stock :	
Average stock of raw material / raw materials consumptions x 365	
320000/4400000 x 365	27
b. Work in progress :	
Average stock of WIP / Production Cost x 365 days	
350000/ 1,00,00,000 x 365 days	13
c. Finished goods held in stock	
Average of Finished goods / Cost of Sales x 365 days	
260000/ 1,05,00,000 x 365	09
d. Credit period allowed to Debtors :	
Debtors / Sales x 365	
4800000 / 1,60,00,000 x 365	11
	60
Less : Average credit period to be allowed by creditors	16
Operating cycle is	**44 days**

30

2. From the following information relating to perara Ltd., Calculate a. Operating cycle b. No. of operating cycle in a Year assuming 360 days , and c. Average working capital required ,

Annual operating expenses are 150 Lakh

Stock holding :

R/M 2 months

WIP 15 days

Finished Goods 1 Months

Average payment period collection : 2 months

Average payment period is 45 days

Solution :a. Computation of operating cycle

Operating Cycle = Raw material days + WIP Days Finished Goods Days + debtors Days – Creditors Days

= 60+15+30+60-45

=120 days

b. Computation of No. of operating cycle in a year **= No. of days in a year / operating cycle**

= 360 / 120 **= 3**

c. **Computation of Average working capital required**

Annual cash operating expenses / No of Operating cycle

= 150 lakh / 3 cycle

= 50 lakh

31

3. Determine the working Capital requirement of a company from the information given below: Operating cycle components : Raw material 60 days, WIP 45 days , Finished goods 15 days , Debtors 30 days , Creditors 60 days, annual turn over 73 lakhs , cost structure (as % of sales price) is materials 50 %, labour 30%, Overheads 10 % and profit = 10 % of the overheads **30% constitute depreciation**. Desired cash balance to be held at all times Rs. 3 lakhs.

Working in Progress :

i. Calculation of WIP cost **under total Approach**

   WIP cost % = Material + 50% of Labour and OH

                = 50 % +50 % of (30%+10%) = 50+ 20 = 70 %

ii. Calculation of % WIP cost **under Cash cost Approach**

   WIP Cost % = Material + 50% of Labour and OH minus depreciation

                = 50 % + 50 of (30 % + 10 %-(10 x 30/100)

                =50 % +50 of 30 + 10 -3

                = 50 % + 50 of (30 +7)

                = 50 + 18.5 = 68.5 %

32

Statement Showing Calculation of Effective days of operating cycle

Particulars	Gross Days	Total Approach		Cash and Approach	
		Cost %	Effective Days	Cost %	Effective days
Current Assets :					
Raw material	60	50 %	30.00	50 %	30.00
WIP	45	70 %	31.50	68.5 %	30.825
Finished Goods	15	90 %	13.50	87 %	13.05
Debtors	30	100 %	30.00	87 %	26.10
Total	**150**		105.00		99.975
Current Liabilities:					
Creditors	60	50%	30	50 %	30.00
Operating cycle	**90**		**75**		**69.975**

Statement Showing Working Capital Requirements

Particulars	Total Approach	Cash Cost Approach
Working Capital	73,00,000 x 75 /365 15,00,000	73,00,000 x 69.975/365 13,99,500
Add : minimum cash balance	3,00,000	3,00,000
Required working capital is	**18,00,000**	**16,99,500**

4. Rose Ltd. Is Engaged in Customer retailing. You are required to estimate its working Capital requirement from the following date:

Projected annual sales Rs. 9,00,000

Percentage of net profit to cost of sale 20%

Average credit allowed to debtors 1 months

Average credit allowed by creditors 2 ½ Months

Average stock carrying (in terms of sales requirement) 2 months

Add 10% to allow for contingencies.

Working notes:

i.   Computation of cost of sales:

Cost of Sales = 9,00,000 / 120 x 100

             =7,50,0000

Statement Showing Working Capital Requirements

Particulars	Rs.
Current Assets : Stock 7,50,000 x 2/12 Debtors 7,50,000 x 1/12	1,25,000 62,500
	1,87,500
Less current liabilities : Creditors 7,50,000 x 2.5 / 12	1,56,250
Net working capital Add : 10 % for Contingencies 31250 x 10%	31,250 3,125
Working capital requirement	**34,375**

You are given the following estimates and are instructed to add 10% to your computed figures to allow for Contingencies

i. **Average amount locked up in stocks :**

Stock of finished goods 5,000

Stock of stores and materials Rs. 8,000

ii. Average credit given:

Internal sales 6 weeks Rs.3,12,000

Export sales – 1.5 weeks Rs. 78,000

iii. Lag in payment of wages and others outgoings:

Wages – 1.5 weeks   Rs. 2,60,000

Stores, materials ect., 1.5 months Rs. 48,000

Rent , Royalties Etc., - 6 months Rs. 10,000

Clerical Staff salary – ½ months Rs. 62,400

Manager Salary – ½ months Rs. 4,800

Miscellaneous expenses – 1½ months Rs. 48,000

iv. Payment in advance:

Sundry Expenses (Paid quarterly in advance) Rs. 8,000

v. Undrawn profit on the average throughout the year. 11,000

Set up your calculation for the average amount of working capital required.

Statement of working capital Requirements

Particulars	Rs
Current Assets :	
Stock:	
Stock of finished goods 5,000	
Stock of stores and materials 8,000	13,000
Debtors:	
Internal sales 6 weeks- Rs. (3,12,000 x 6/52) 36,0000	
Export sales – 1.5 weeks - Rs. (78,000 x 1.5 / 52) 2,250	
Payment in advance:	38,250
Sundry Expenses (Paid quarterly in advance)	
Rs. (8,000 x 3/12)	2,000
Total Current Assets (A)	**53,250**

Statement of working capital Requirements

Particulars		Rs
Current Assets :		
Stock:		
Stock of finished goods	5,000	
Stock of stores and materials	8,000	13,000
Debtors:		
Internal sales 6 weeks- Rs. (3,12,000 x 6/52)	36,0000	
Export sales – 1.5 weeks - Rs. (78,000 x 1.5 / 52)	2,250	
Payment in advance:		38,250
Sundry Expenses (Paid quarterly in advance)		
Rs. (8,000 x 3/12)		2,000
Total Current Assets (A)		**53,250**

6 From the following information, prepare a statement showing the Estimated working capital requirements:

Budgeted sales – Rs. 2,60,000 pa.

Analysis of cost and profit of each unit.

Raw Materials	– Rs. 3
Labour	– Rs. 4
Overheads	– Rs 2
Profit	– Rs.1
Selling Price per Unit	– Rs. 10

It is estimated that

i. Pending use, raw materials are carried in stock for 3 weeks and finished goods for 2 weeks

ii. Factory processing will take 3 weeks.

iii. Suppliers give 5 weeks credit

iv. Customer will require 8 weeks credit

It may be assumed that the production and overheads accrue evenly throughout the year.

Working Notes:

i. Number of units sold

Budgeted Sales / Budgeted sales per unit   = 2,60,000 / 10 = **26,000 units**

Statement of working capital Requirements

Particulars	Rs.	Rs.
Current Assets		
Stock		
Raw material (78.000 x 3/52)		4,500
WIP		
Raw material 4,500		
Labour (1,04,000 x 3/52) 3,000		
Overheads (52,000 x 2/52) 1,500	9,000	
Finished goods (2,34,000 x 2/52)	9,000	22,500
Debtors (2,34,000 x 8/52)		36,000
Total Current Assets : A		**58,500**
Less: Current Liabilities		
Creditors for raw material (78,000 x 5/52) -B		7,500
A-B = Net working Capital Required		**51,000**

ii. Annual Expenditure :
Raw material 26,000 x 3= 78,000
Labour   26,000 x 4 = 1,04,000
Overheads 26,000 x 2 = 52,000
Total   = 2,34,000

41

Receivable Management

The term receivable Management refers to Sum of all monies owed to the firm by its customers arising from sale of goods or services in the ordinary course of business. These are claims of a firm against its customers and are shown on the assets side of the balance sheet under titles. Such as debtors, account receivables, trade receivable, customer receivable or book debts.

Purpose of Maintaining Receivables
i.   Increase in sales
ii.   Increase in profits
iii. Meeting competition

Cost of Maintaining Receivables
i.   Capital Cost
ii.   Administrative Cost
iii. Collection cost
iv.   Defaulting cost

Aspects of Management of Receivables
i.   Credit Policy
ii.   Credit Analysis
iii. Control of Receivables

42

1. Sen & Co. Sells goods for cash as well as on credit. The following particulars are extracted from their
Books of accounts for the year ended 31st dec. 1995:
Total gross sales (including cash sales Rs. 20000) - 1,00,000
Sales return – 7,000
Total debtors as on 31.12.95 – 9,000
Bills receivable as on 31.12.95 – 2,000
Provision for doubt full debts 31.12.95 – 1,000
Total creditors as on 31.12.95 – 10,000
Calculate the average collection period of debtors in days.

Average collection period = Accounts Receivable / Net Credit sales x 365 days
Account receivables = debtors + B/R
                    = 9,000 + 2,000
                    = Rs. 11,000
Net Credit sales = credit sales – sales return
                = (1,00,000 – 20,000) -7,000
                = 80,000 -7000 = 73,000   Average collection period = 11,000 / 73,000 x 365 = 55 days

Inventory Management

Its most important current Assets of a firm

Inventory refers to the pile of the product a firm is offering for sale and the components that make up the product.

In other words inventory is composed of assets that will be sold off in future in the course of business operation.

Inventory is a tangible property

Held for sale in the ordinary course of business

In the process of production of such sale

To be consumed in the production of goods or service for sale.

1. Raw material
2. Purchased parts
3. Work in progress
4. Finished goods
5. Supplies

Benefits of Holding Inventory

1. Avoiding loss of sales
2. Gaining quantity discount
3. Reducing order cost
4. Achieve efficient production runs
5. Reducing risk of Production shortages

Need / Purpose of Holding Inventory

1. Transaction motive
2. Precaution Motive
3. Speculative Motive

44

Risk and cost of holding inventory

1. Risk of price decline

2. Risk of Obsolescence

3. Purchase cost

4. Ordering cost

5. Carrying Cost

6. Quality cost

7. Stock out (shortage) Cost

Objective of inventory

1. To ensure an adequate supply of material

2. To avoid over stocking / under stocking

3. To promote manufacturing efficiency

4. To permit a better utilisation of visible stocks

5. To eliminating duplication in ordering

Economic Order Quantity

Techniques of inventory Management

1. Economic order quantity
2. Determination of stock level
3. ABC analysis
4. Inventory turn over ratio
5. Just in time
6. VED analysis
7. FSN Analysis
8. Min-Max Method
9. Perpetual Inventory System
10. Automatic order system

The total costs of a material usually consist of:
Total acquisition cost + Total ordering cost + Total carrying cost.

Total Acquisition Cost:
Total Acquisition cost through buying is usually unaffected irrespective of the quantity of material ordered at one time unless quantity discounts are available.

Carrying Cost:
It is the cost of holding the materials in the store and includes

Ordering Cost:
It is the cost of placing orders for the purchase of materials and includes

$$Q = \sqrt{\frac{2CO}{I}}$$

46

1. A unit of material X costs Rs 50 and the yearly consumption is 20,000 units. The cost of placing one order including the cost of receiving the material is Rs 20 and the interest including variable storage cost is 10% per annum. The optimum quantity for which order is to be placed is

Yearly consumption C = 20,000 units.

placing one order O = Rs 20

Cost = Rs 50 x 10/100 = 5

Interest including variable storage cost is 10% per annum.

$$Q = \sqrt{\frac{2CO}{I}} = \sqrt{\frac{2 \times 20{,}000 \times ₹\,20}{₹\,5}} = 400 \text{ units.}$$

Ordering Levels or Level Setting:

(a) Re-order Level
(b) Minimum Level
(c) Maximum Level
(d) Danger Level
(e) Average Stock Level

Order Level:

Re-ordering level can be calculated by applying the following formula.

Ordering Level = Minimum Level + Consumption during the time required to get the fresh delivery.

Re-ordering Level = Maximum Consumption x Maximum Re-order Period.

Maximum Stock Level = Reordering Level + Re-ordering Quantity – (Minimum Consumption x Minimum Re-ordering Period)

Minimum Stock Level = Re-ordering Level – (Normal Consumption x Normal Re-order Period),

Danger Level = Average consumption x Max. re-order period for emergency purchases

Average Stock Level = Minimum Stock Level + 1/2 of Re-order Quantity (or) 1/2 (Minimum Stock Level + Maximum Stock Level)

Calculate the ordering level of material A from the following particulars:

(i) Minimum Limit 500 units.

(ii) Maximum limits 2,500 units.
(iii) Daily requirement of material 100 units.
(iv) Time required for fresh delivery 10 days.

Ordering Level = Minimum limit + Consumption during the time required for fresh delivery

= 500 units + 100 x 10 units

= 1,500 units.

Order for the purchase of material should be placed when the material in stock reaches 1,500 units.

2. Calculate the re-ordering level from the following information:

Maximum consumption = 300 units per day
Minimum consumption = 200 units per day
Re-order period = 8 to 10 days.

Solution:

Re-ordering level = Maximum consumption x Maximum re-order period

= 300 units x 10.

=3,000 units

3. If the minimum stock level and average stock level of raw material A are 20,000 and 40,000 units respectively, find out its re-order quantity.

Solution:

Average Stock Level = Minimum Stock Level + ½ Re-order Quantity

(Or) ½ Re-order Quantity = Average Stock Level – Minimum Stock Level

½ Re-order Quantity = 40,000 units – 20,000 units.

Re-order Quantity = 20,000 units x 2

= 40,000 units.

4 . Compute the a.) Re-order level, b.)Minimum Level c.) Maximum Level, d.) Average Stock level for components A and B on the following data:

Particulars	Components	
	A	B
Maximum Consumption per week (in units)	150	150
Average consumption per week (in units)	100	100
Minimum consumption per week (in units)	50	50
Re-order period (in weeks)	8 to 12	4 to8
Re-order quantity (in units)	400	600

SOLUTION

(Re-order Level = Maximum Consumption x Maximum Re-order Period)

Components A   = 150 units x 12 = 1,800 units.

Components B   = 150 units x 8   = 1,200 units.

Minimum Level= Re-order Level — (Normal Consumption x Normal Re-order Period)

Components A   = 1,800 units – (100 units x 10) = 800 units

Components B   = 1,200 units – (100 units x 6) = 600 units

Maximum Level = Re-order Level + Re-order Quantity – (Minimum Consumption x Minimum Re-order Period)

Components A   = 1,800 units + 400 units – (50 units x 8) = 1,800 Units

Components B   = 1,200 units + 600 units – (50 units x 4) = 1,600 Units

Average Stock Level = Minimum Stock Level + ½ Re-order Quantity

(Or) ½ Re-order Quantity = Average Stock Level – Minimum Stock Level

Components A   = 800 units + ½ x 400 units   = 1,000 units

Components B   = 600 units + ½ x 600 units   = 900 units

The term cash refers to any legal medium of exchange that immediately negotiable and free of restrictions. It includes coins , notes , cheque , draft, postal orders saving deposits and bank deposits

Cash management refers to collection, concentration and disbursement of cash.

Objectives of cash management
1. To make payment according to payment schedule
2. To minimise cash balance

Cash Budget
A large number of transaction that take place in a firm generate a flow of cash. The flow of cash may be into or out of the firm. A cash budget shows the cash inflow and outflow expected in a budget period and net effect of these flow on cash balances.

Methods of cash budget
i. Receipts and payment method
ii. Adjusted profit and loss method
iii. Balance sheet method

(1) Saurashtra Co. Ltd. wishes to arrange overdraft facilities with its bankers from the period August to October 2010 when it will be manufacturing mostly for stock. Prepare a cash budget for the above period from the following data given below:

Month	Sales (Rs.)	Purchases (Rs.)	Wages (Rs.)	Mfg. Exp. (Rs.)	Office Exp. (Rs.)	Selling Exp. (Rs.)
June	1,80,000	1,24,800	12,000	3,000	2,000	2,000
July	1,92,000	1,44,000	14,000	4,000	1,000	4,000
August	1,08,000	2,43,000	11,000	3,000	1,500	2,000
September	1,74,000	2,46,000	12,000	4,500	2,000	5,000
October	1,26,000	2,68,000	15,000	5,000	2,500	4,000
November	1,40,000	2,80,000	17,000	5,500	3,000	4,500
December	1,60,000	3,00,000	18,000	6,000	3,000	5,000

Additional Information: (a) Cash on hand 1-08-2010 Rs.25,000. (b) 50% of credit sales are realized in the month following the sale and the remaining 50% in the second month following. Creditors are paid in the month following the month of purchase. (c) Lag in payment of manufacturing expenses half month. (d) Lag in payment of other expenses one month.

CASH BUDGET

For 3 months from August to October 2010

Particulars	August (Rs.)	September (Rs.)	October (Rs.)
Receipts:			
Opening balance	25,000	44,500	(66,750)
Sales	1,86,000	1,50,000	1,41,000
Total Receipts(A)	2,11,000	1,94,500	74,250
Payments:			
Purchases	1,44,000	2,43,000	2,46,000
Wages	14,000	11,000	12,000
Mfg. Exp.	3,500	3,750	4,750
Office Exp.	1,000	1,500	2,000
Selling Exp.	4,000	2,000	5,000
Total payments(B)	1,66,500	2,61,250	2,69,750
Closing Balance(A-B)	44,500	(66,750)	(1,95,500)

57

Working Note:

1. Manufacturing Expense:

Particular	August	September	October
July (4000/2)	2000	---	---
August (3000/2)	1500	1500	---
September (4500/2)	---	2250	2250
October (5000/2)	---	----	2500
Total	3500	3750	4750

2. Sales

Particular	August	September	October
June (180000/2)	90000	---	---
July (192000/2)	96000	96000	---
August (108000/2)	---	54000	54000
September (174000/2)	---	----	87000
Total	186000	150000	141000

FACTORING

Factoring is a service of financial nature involving the conversion of credit bills into cash. Accounts receivables, bills recoverable and other credit dues resulting from credit sales appear, in the books of accounts as book credits. Here the risk of credit, risk of credit worthiness of the debtor and as number of incidental and consequential risks are involved. These risks are taken by the factor which purchase these credit receivables without recourse and collects them when due. These balance-sheet items are replaced by cash received from the factoring agent. Factoring is also called "Invoice Agent" or purchase and discount of all "receivables". Although these can be with recourse or without recourse, normally the risk is taken by the factoring agent. The discount rate includes the loss of interest, risk of credit and risk of loss of both principal and interest on the amount involved.

Factoring services rendered the following services: 1. Purchase of book debts and receivables. 2. Administration of sales ledger of the clients. 3. Prepayments of debts partially or fully. 4. Collection of book debts or receivables or with or without documents. 5. Covering the credit risk of the suppliers. 6. Dealing in book debts of customers without recourse.

The following are the steps for factoring:

1. The customer places an order with the seller (client). 2. The factor and the seller enter into a factoring agreement about the various terms of factoring. 3. Sale contract is entered into with the buyer and the goods are delivered. The invoice with the notice to pay the factor is sent alongwith. 4. The copy of invoice covering the above sale to the factor, who maintains the sale ledger. 5. The factor prepays 80% of the invoice value. 6. The monthly statement are sent by the factor to the buyer. 7. Follow up action is initiated if there are any unpaid invoices. 8. The buyer settles the invoices on the expiry of the credit period allowed. 9. The balance 20% less the cost of factoring is paid by the factor to the client.

Types of factoring

(1) Notified factoring: Here, the customer is intimated about the assignment of debt to a factor, also directed to make payments to the factor instead of to the firm. This is invariably done by a legend and the invoice has been assigned to or sold to the factor.

(2) Non-notified or confidential factoring: Under this facility, the supplier/factor arrangement is not declared to the customer unless or until there is a breach of the agreement on the part of the client, or exceptionally, where the factor considers himself to be at risk.

(3) With recourse or without recourse factoring: Under recourse arrangements, the client will carry the credit risk in respect of debts sold to the factor. In without recourse factoring, the bad debts are borne by the factor.

(4) Bank Participation Factoring: The client creates a floating charge on the factoring reserves in favour of banks and borrow against these reserves.

(5) Export Factoring: There is usually the presence of two factors: an export factor and an import factor. The former buys the invoices of a client exporter and assumes the risk in case of default by the overseas customers. Because of distance, different condition or lake of information, the export factor usually forms out to an agent, known as the import factor, the administrative job of servicing the debts owed to its exporting clients.
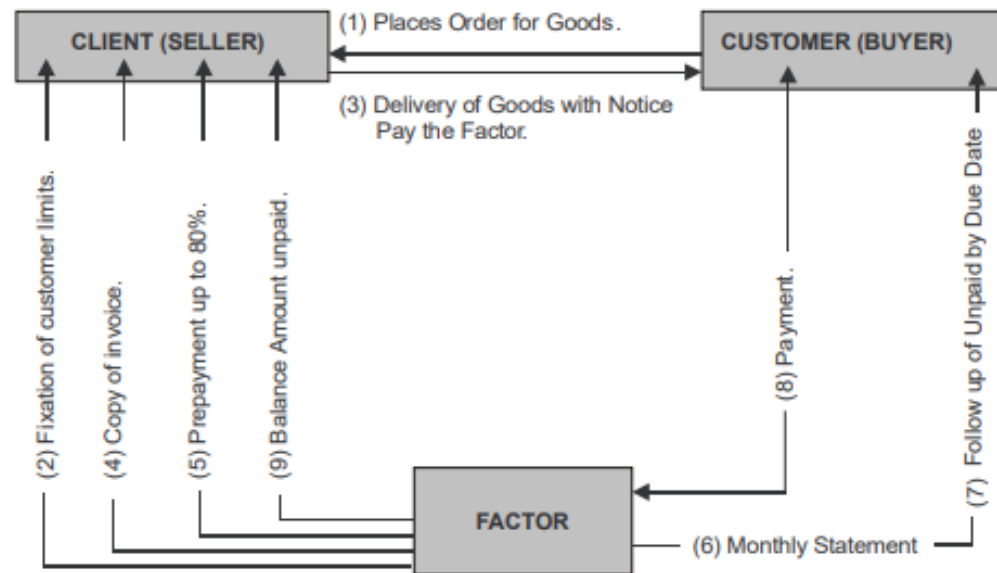
Mechanics of Factoring

(1) Places Order for Goods.

(3) Delivery of Goods with Notice Pay the Factor.

CLIENT (SELLER)

CUSTOMER (BUYER)

(2) Fixation of customer limits.

(4) Copy of invoice.

(5) Prepayment up to 80%.

(9) Balance Amount unpaid.

(8) Payment.

(7) Follow up of Unpaid by Due Date

FACTOR

(6) Monthly Statement

Fig. 12.2 Mechanics of Factoring