MAR GREGORIOS COLLEGE OF ARTS & SCIENCE

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DEPARTMENT OF COMMERCE (ACCOUNTING & FINANCE)

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Unit I

SCOPEANDOBJECTIVEOFFINANCIALMANAGEMENT

INTRODUCTION

Finance is called "The science of money". It studies the principles and the methods ofobtaining, control of money from those who have saved it, and of administering it by those intowhose control it passes. It is the process of conversion of accumulated funds to productive use.Financial management is the science of money management .It is that managerial activity which isconcerned with planning and controlling of the firm's financial resources. In other words it isconcerned with acquiring, financing and managing assets to accomplish the overall goal of abusinessenterprise.

MEANING,DEFINITIONANDNATUREOFFINANCIALMANAGEMENT:

MeaningandDefinition

Financial management is that managerial activity which is concerned with the planning andcontrollingofthefirm'sfinancialresources.Inotherwordsitisconcernedwithacquiring,financing and managing assets to accomplish the overall goal of a business enterprise (mainly tomaximisetheshareholder'swealth).

"Financialmanagement isconcernedwiththeefficientuseofanimportanteconomicresource,namelycapitalfunds"-Solomon Ezra& J.JohnPringle.

"Financial management is the operational activity of a business that is responsible forobtaining and effectively utilizing the funds necessary for efficient business operations"-J.L.Massie.

"FinancialManagementisconcernedwithmanagerialdecisionsthatresultintheacquisition and financing of long-term and short-term credits of the firm. As such it deals with thesituations that require selection of specific assets (or combination of assets), the selection ofspecific liability (or combination of liabilities) as well as the problem of size and growth of anenterprise. The analysis of these decisions is based on the expected inflows and outflows of fundsandtheireffectsupon managerial

objectives".-Phillippatus.

'FinancialEngineering'

The creation of new and improved financial products through innovative design orrepackagingofexistingfinancial instruments.

Financialengineersusevariousmathematicaltoolsinordertocreatenewinvestmentstrategies. The new products created by financialengineerscan serve as solutions to problems oraswaysto maximizereturns from potentialinvestment opportunities.

The management of the finances of a business / organization in order to achieve financialobjectives

Takingacommercialbusinessasthemostcommonorganizationalstructure,thekeyobjectivesoffi nancial management would beto:

• Createwealthforthebusiness

• Generatecash,and

• Provideanadequatereturnoninvestment-bearinginmindtheriskthatthebusinessistakingandtheresourcesinvested.

Therearethreekeyelementstotheprocessof financialmanagement:

(1) FinancialPlanning

Management need to ensure that enough funding is available at the right time to meet theneeds of the business. In the short term, funding may be needed to invest in equipment and stocks,payemployeesetc.

Inthemediumandlongterm,fundingmayberequiredforsignificantadditionstotheproductivecapacityoftheb usinessorto makeacquisitions.

(2) FinancialControl

Financialcontrolisacriticallyimportantactivitytohelpthebusinessensurethatthebusinessismeetingitsobjec tives.Financial controladdressesquestionssuch as:

• Areassetsbeingusedefficiently?

• Arethebusinessesassetssecure?

• Domanagement actinthebestinterestofshareholdersandinaccordancewithbusinessrules?

(3) FinancialDecision-making

Thekeyaspectsoffinancialdecision-makingrelatetoinvestment,financinganddividends:

• Investments must be financed in some way –such as selling new shares, borrowing from banksortakingcredit from suppliersetc.

• A key financing decision is whether profits earned by the business should be retained rather thandistributed to shareholders via dividends. If dividends are too high, the business may be starved offundingto reinvest in growingrevenuesandprofitsfurther.

NatureofFinancialManagement

- Itisanindispensableorganofbusinessmanagement.
- Itsfunctionisdifferent fromaccountingfunction.
- Itisacentralised function.
- Helpfulindecisionsoftopmanagement.
- Itapplicabletoalltypesofconcerns.
- Itneedsfinancialplanning,control andfollow-up.
- Itrelatedwithdifferentdisciplineslikeeconomics,accounting,law,informationtechnology, mathematicsetc.

SCOPEANDFUNCTIONSOFFINANCIALMANAGEMENT:

The scope of financial managementhas undergone changes over theyears . Until themiddle of this century, its scope was limited to procurement of funds. In the modern times ,thefinancial management includes besides procurement of funds ,the three different kinds of decisionaswellnamelyinvestment,financinganddividend.Scopeandimportanceoffinancialmanagement includes-

- Estimatingthetotalrequirementsoffundsfora givenperiod.
- Raisingfundsthroughvarioussources,bothnationalandinternational,keepinginmindthecosteffectiveness;
- Investingthe fundsinbothlongtermaswellasshorttermcapitalneeds;
- Fundingday-to-dayworkingcapitalrequirementsofbusiness;
- Collectingontimefromdebtorsandpayingtocreditorson time;
- Managingfundsandtreasuryoperations;
- Ensuringasatisfactoryreturntoallthestakeholders;
- Payinginterestonborrowings;
- Repayinglendersondue dates;
- Maximizingthewealth ofthesshareholdersoverthelongterm;
- Interfacingwiththecapitalmarkets;
- Awarenesstoallthelatestdevelopmentsinthefinancialmarkets;
- Increasingthefirm'scompetitivefinancialstrengthinthemarket;and
- Adheringtotherequirementsofcorporate governance.

Theabovescopeof activitiescanbe groupedintothreefunctions-

FUNCTIONSOFFINANCIALMANAGEMENT:

The modern approach to the financial management is concerned with the solution of majorproblems like investment financing and dividend decisions of the financial operations of a businessenterprise. Thus, the functions of financial management can be broadly classified into three majordecisions,namely:

(a) Investmentdecisions,

(b) Financingdecisions,

(c) Dividenddecisions.

1. Investment decisions: These decisions relate to the selection of assets in which funds will beinvested by a firm .Funds procured from different sources have to be invested in various kinds ofassets . Long term funds are used in a project for various fixed assets and also for current assets.The investment of funds in a project has to be made after careful assessment of the various projectsthrough capital budgeting .A part of long term fund is also to be kept for financing the workingcapitalrequirements.

2. Financing decision : These decisions relate to acquiring the optimum finance to meet financialobjectives and seeing that fixed and working capital are effectively managed. It includes sources ofavailable funds and their respective cost ,capital structure,i.e. a proper balance between equity anddebt capital. It segregate profit and cash flow, financing decisionsalso call for a good knowledgeofevaluation ofrisk.

3. Dividend decision- These decisions relate to the determination as to how much and howfrequentlycashcanbepaidoutoftheprofitsofanorganisationasincomeforitsowners/shareholders, and the amount to be retainedto support the growth of the organisation .Thelevel and regular growth of dividends represent a significant factor indetermining a profit makingcompany'smarket valuei.e. thevalueplaced on itssharesbythestock market.

All the above three type of decisions are interrelated ,the first two pertaining to any kind oforganisation while the thirdrelates only to profit making organisations, thus it can be seen thatfinancialmanagementisofvitalimportanceateverylevelofbusinessactivity,fromasoletradertothelargest multinational corporation.

FUNCTIONALAREASOFFINANCIALMANAGEMENT

- CapitalBudgeting
- WorkingCapitalManagement
- DividendPolicies
- AcquisitionsandMergers
- CorporateTaxation
- DeterminingFinancialNeeds
- DeterminingSourcesof Funds
- FinancialAnalysis
- OptimalCapitalStructure
- CostVolumeProfitAnalysis
- ProfitPlanningandControl
- FixedAssetsManagement
- ProjectPlanningandEvaluation.

OBJECTIVEOFFINANCIALMANAGEMENT:

FinancialManagementas the namesuggests is managementoffinance.Itdealswithplanning and mobilization of funds required by the firm. Managing of finance is nothing butmanaging of money. Every activity of an organization is reflected in its financial statements.Financial Management deals with activities which have financial implications. Efficient financialmanagement requires the existence of some objectives or goals because judgment as to whether ornotafinancial decisionisefficientmust bemadein thelight ofsomeobjectives.Itincludes-

- Profitmaximisationandwealth/valuemaximisation
- Achievingahigher growthrate.
- Attainingalargemarket share.
- Promotingemployeewelfare
- Increasingcustomersatisfaction.
- Improvecommunitylife.

Amongthese,aconflictincludedinprofitmaximisationandwealth/valuemaximisationobjectivei .e.-

Theprimaryobjectiveofabusinessistoearnprofit;hencetheobjectiveoffinancial managementisalsoprofitpro maximisation.Ifprofitisgivenundueimportance,anumberof blemscanarise,suchas-

- Itdoesnottakeintoaccount thetimepattern ofreturns.
- Itfailstotakeintoaccountthesocialconsiderationtoworkers,customersetc.
- The term profit is vague – it conveys a different meaning to different people .e.g. totalprofit,rateofprofit etc.

In wealth maximisation business firm maximise its market value ,it implies that businessdecision should seek to increase the net present value of the economic profit of the firm .It is theduty of the finance manager to see that the share holders get good return on the share (EPS - EarningperShare).Hence,thevalueoftheshareshould increaseinthestock market.

The wealth maximisation objective is generally in accord with the interest of the variousgroupssuch asowners,employeesetc.

Owingtolimitation(timing,socialconsiderationetc.)inprofitmaximisation,intoday'srealworlds ituationswhichisuncertainandmulti-periodinnature,wealthmaximisationisabetter objective.Wherethetimeperiodisshortanddegreeofuncertaintyisnotgreat,wealth maximisationandprofitmaximisationamounttoessentiallythesame.

TIMEVALUEOFMONEYANDMATHEMATICSOFFINANCE

Concept

Weknowthat ₹ 100inhandtodayismorevaluablethan ₹ 100receivableafterayear. Wewillnotpartwith ₹ ₹ 100nowif₹thesamesumisrepaidafterayear.Butwemightpartwith100nowifwe areassuredthat 110willbepaidat₹theendofthefirstyear.This"additional Compensation"requiredfor parting 100today,iscalled"interest" or"thetimevalueof money". Itisexpressedintermsofpercentageper annum.

Moneyshouldhavetimevalueforthefollowing reasons:

- Moneycanbe employed productivelytogenerate realreturns;
- Inaninflationaryperiod,arupeetodayhashigherpurchasingpowerthanarupeeinthefuture;
- Due to uncertainties in the future, current consumption is preferred to futureConsumption.
- Thethree determinetherateof determinantscombinedtogethercanbeexpressedtointerestasfollows:

Nominalormarketinterestrate

=Realrate ofinterestor return (+)Expectedrateof inflation(+) Riskpremiumstocompensateforuncertainty.

TimeValueofMoneyandmathematics

(1) Compounding:WefindtheFutureValues(FV)ofallthecashflowsattheendofthetimeperiodat agivenrateofinterest.

(2) Discounting:WedeterminetheTimeValueofMoneyatTime"O"bycomparingtheinitialoutflowwith thesumofthePresentValues(PV) ofthefutureinflowsatagivenrateofinterest.

TimeValue of Money

Compounding (FutureValue)	**Discounting(Pr esentValue)**
(a) SingleFlow	(a) SingleFlow
(b) MultipleFlows	(b) UnevenMultipleFlows
(c) Annuity	(c) Annuity

FutureValueofaSingleFlow

Itistheprocesstodeterminethefuturevalueofalumpsumamountinvestedatonepointoftime.

FVn=PV(1+i)n

Where,

FVn = Future value of initial cash outflow after n yearsPV=Initial cashoutflow

i=Rateof Interestp.a.

n= LifeoftheInvestment

and(1+i)n=FutureValueof InterestFactor(FVIF)

Example

The fixed deposit scheme of Punjab National Bank offers the following interest rates :PeriodofDeposit RatePerAnnum

46daysto179days5.0

180days<1year5.5

1 yearandabove6.0

An amount of Rs. 15,000 invested today for 3 years will be compounded to

:FVn=PV(1+i)n

=PV×FVIF(6, 3)

=PV×(1.06)3

=15,000 (1.191)

= ₹ 17,865

PresentValueof aSingleFlow :

$$PV = \frac{FVn}{(1+i)n}$$

Where,PV=PresentValue

FVn= Future Value receivable after n

yearsi=rateofinterest

n=timeperiod

Example

CalculateP.V.of ₹ 50,000receivablefor3years@10%

P.V.=CashFlows×Annuity@10%for3years.

=50,000 ×2.4868 = ₹ 1,24,340/-

CONCEPTOFRISKANDRETURN

Return expresses the amount which an investor actually earned on an investment during acertain period. Return includes the interest, dividend and capital gains; while risk represents theuncertainty associated with a particular task.Infinancial terms, risk is the chance or probabilitythatacertain investment mayormaynotdelivertheactual/expectedreturns.

Investors make investment with the objective of earning some tangible benefit. This benefitinfinancialterminologyistermedasreturnand isareward fortakingaspecified amountofrisk.

Risk is defined as the possibility of the actual return being different from the expectedreturn on an investment over the period of investment. Low risk leads to low returns. For instance,in case of government securities, while the rate of return is low, the risk of defaulting is also low.High risks lead to higher potential returns, but may also lead to higher losses. Long-term returns onstocks are much higher than the returns on Government securities, but the risk of losing money isalsohigher.

The risk and return trade off says that the potential return rises with an increase in risk. It isimportant for an investor to decide on a balance between the desire for the lowest possible risk andhighestpossiblereturn.

Rate of return on an investment can be calculated using the following formula-

Return=(Amountreceived - Amount invested) /Amount invested

The functions of Financial Management involves acquiring funds for meeting short term and longterm requirements of the firm, deployment of funds, control over the use of funds and to trade-offbetweenriskand return.

UNIT -II

INVESTMENTDECISION

Investment decision relates to the determination of total amount of assets to be held in thefirm ,the composition of these assets and the business risk complexions of the firm as perceived byits investors .It is the most important financial decision that the firm makes in pursuit of makingshareholderswealth.

Investmentdecisioncan beclassifiedundertwobroad groups.

- Long–terminvestmentdecisioni.e.Capitalbudgeting.
- Short-terminvestmentdecisioni.e.WorkingCapitalManagement.

The evaluation of long-term investment decisions or investment analysis to be consistentwiththefirm'sgoal involvesthefollowingthreebasicsteps.

1. Estimationordeterminationofcashflows.
2. Determiningtherateofdiscountorcostofcapital.
3. Applying the technique of capital budgeting to determine the viability of the investmentproposal.

1. Estimationofrelevantcashflows.

If a firm makes an investment today ,it will require an immediate cash outlay, but thebenefits of this investmentwillbe received in future .Thereare two alternative criteriaavailableforascertainingfutureeconomicbenefitsofan investment proposal-

1. Accountingprofit
2. Cashflow.

The term accounting profit refers to the figure of profit as determined by the IncomestatementorProfitandLossAccount,whilecashflowreferstocashrevenuesminuscashexpenses. The difference between these two criteria arises primarily because of certain non-cashexpenses, such as depreciation, being charged to profit and loss account .Thus, the accountingprofits have to be adjusted for such non-cash charges to determine the actual cash inflows. In fact,cash flows are considered to be better measure of economic viability as compared to accountingprofits.

2. Determiningtherate ofdiscountorcostof capital.

It is the evaluation of investment decisions on net present value basis i.e. determine the rate ofdiscount.Cost ofcapital istheminimum rateofreturn expectedbyitsinvestors.

3. Applying the technique of capital budgeting to determine the viability of the investmentproposal.

Capital Budgeting is the process of making investment decisions in capital expenditures. Acapital expenditure may be defined as an expenditure the benefit of which are expected to bereceived over period of time exceeding one year. Capital Budgeting technique helps to determinetheviabilityoftheinvestment proposal ortakinglong-term investment decision.

CAPITALBUDGETINGPROCESS:

ACapitalBudgetingdecisioninvolvesthefollowingprocess:

(1) Identificationofinvestmentproposals.

(2) Screeningtheproposals.

(3) Evaluationofvariousproposals.

(4) Fixingpriorities.

(5) Final approvalandpreparationof capitalexpenditurebudget.

(6) Implementingproposal.

(7) Performancereview.

The overall objective of capital budgeting is to maximise the profitability of a firm or thereturn on investment. There are many methods of evaluating profitability of capital investmentproposals.

METHODS OF CAPITAL BUDGETING OR OF INVESTMENT EVALUATIONPROPOSALS(INVESTMENTAPPRAISALTECHNIQUES)

Thevariouscommonlyusedmethodsare asfollows.

I .Traditionalmethods

(1) Paybackperiodmethodor payoutor payoffmethod.(PBP)

(2) AccountingRateofReturnmethodorAverage RateofReturn. (ARR)

II.Timeadjustedmethodordiscountedmethod(3)

Net Present Value

method.(NPV)(4)Profitability Index

method (PI)(5)Internal Rate of Return

method (IRR)(6)NetTerminal

Valuemethod (NTV)

(1)Paybackperiodmethodorpayoutorpayoffmethod.(PBP)

Thebasicelementofthismethodistocalculatetherecoverytime,byyearwiseaccumulation of cashinflows(inclusive of depreciation) untilthe cashinflowsequaltheamountof theoriginalinvestment.Theper timetakentorecoversuchoriginalinvestmentisthe“payback iod”fortheproject.

“Theshorterthepaybackperiod,themoredesirableproject”.

Thepaybackperiodcanbecalculatedin twodifferentsituationasfollows-

(a) Whenannualcashinflowareequal

$$\textbf{Paybackperiod}=\frac{\text{Originalcostoftheproject(cashoutlay)}}{\text{Annualnetcashinflow(netearnings)}}$$

Example- .Aprojectcostcalculatepaybackperiod. ₹ ₹

1,00,000andyieldsanann
ualcashinflowof 20,000for8years,

$$\text{Payback period} = \frac{\text{Original cost of the project (cash outlay)}}{\text{Annual net cash inflow (net earnings)}}$$

$$= \frac{1,00,000}{20,000} = 5 \text{ years.}$$

(b) When annual cash inflows are unequal

It is ascertained by cumulating cash inflows still the time when the cumulative cash inflows become equal to initial investment.

Payback period = $Y + \frac{B}{C}$

Y = No of years immediately preceding the year of final recovery. B = Balance amount still to be recovered.

C = Cash inflow during the year of final recovery.

Example: Initial Investment = E ₹ 10,000 in a project

xpected future cash ₹ 2000, ₹ 4000, ₹ 3000, ₹ 2000

inflows **Solution:**

Calculation of Pay Back period.

Year	*Cash Inflows (₹)*	*Cumulative Cash Inflows (₹)*
1	2000	2000
2	4000	6000
3	3000	9000
4	2000	11000

The initial investment is recovered between the 3rd and the 4th year.

Payback period = $Y + \frac{B}{C} = 3 + \frac{1000}{2000}$ years = $3 + \frac{1}{2}$ years = 3 year 6 months

Merits of Payback period:

(1) No assumptions about future interest rates.

(2) In case of uncertainty in future, this method is most appropriate.

(3) A company is compelled to invest in projects with shortest payback period, if capitalisa constraint.

(4) Itisanindicationforinves theprospectiveinvestorsspecifyingthepaybackperiodoftheirtheirpayba tments.

(5) Rankingprojectsaspercon ckperiodmaybeusefultofirmsundergoingliquidity straints.

DemeritsofPaybackperiod:

(1) Cash generationbeyondpaybackperiodisignored.

(2) Thetimingofreturnsandthecost ofcapitalisnot considered.

(3) Thetraditional payback methoddoesnot considerthesalvagevalueofan investment.

(4) PercentageReturnon the capitalinvestedisnotmeasured.

(5) Projectswithlongpaybackperiodsarecharacteristicallythoseinvolvedinlong-termplanning,whichareignored in thisapproach.

(2) AccountingRateof Return methodorAverageRateof Return(ARR)

Thismethodmeasurestheincreaseinprofitexpectedtoresultfrominvestment. It is based on accounting profits and not cash flows.

$$ARR=\frac{\text{Averageincomeor return}}{\text{Averageinvestment}}\times 100$$

$$\text{Averageinvestment}=\frac{\text{Originalinvestment}+\text{Salvagevalue}}{2}$$

Example.

Aprojectcosting ₹ 10lacs.EBITD(Earningsbefore Depreciation,Interestand Taxes)duringthefirst ₹ fiveyearsisexpectedtobe ₹ 2,50,000; ₹ 3,00,000; ₹ 3,50,000; ₹ 4,00,000and5,00,000.Assume33.99%taxand 30%depreciationon WDVMethod.

Solution:

Computationof ProjectARR:

Particulars	**Yr1**	**Yr2**	**Yr3**	**Yr4**	**Yr5**	**Average**
	₹	₹	₹	₹	₹	₹
EBITD	2,50,000	3,00,000	3,50,000	4,00,000	5,00,000	3,60,000
Less:Depreciation	3,00,000	2,10,000	1,47,000	1,02,900	72,030	1,66,386
EBIT	(50,000)	90,000	2,03,000	2,97,100	4,27,970	1,93,614
Less:Tax@33.99%	-	13,596	69,000	1,00,984	1,45,467	65,809
Total	(50,000)	76,404	1,34,000	1,96,116	2,82,503	**1,27,805**
BookValueof Investment:						
Beginning	10,00,000	7,00,000	4,90,00	3,43,000	2,40,100	
End	7,00,000	4,90,000	3,43,000	2,40,100	1,68,070	
Average	8,50,000	5,95,000	4,16,500	2,91,550	2,04,085	**4,71,427**

$$ARR=\frac{\text{Averageincomeor return}}{\text{Averageinvestment}}\times 100=\frac{127805}{471427}\times 100 == 27.11\%$$

Note :Unabsorbeddepreciationof Yr.1iscarriedforwardandset-offagainstprofitsof Yr.2.Taxiscalculated on thebalanceofprofits

=33.99% (90,000 –50,000)

=13,596/-

MeritsofARR

(1) Thismethodconsidersallthe yearsinthelife oftheproject.

(2) Itisbaseduponprofitsandnotconcernedwith cashflows.

(3) Quickdecisioncanbeco takenwhenanumberofcapitalinvestmentproposalsarebeing nsidered.

DemeritsofARR

(1) TimeValueofMoneyis not considered.

(2) Itisbiasedagainstshort-termprojects.

(3) TheARRisnotanindicatorofacceptanceorrejection,unlesstheratesarecomparedwiththearbitrary management target.

(4) Itfailstomeasurethe rateofreturnonaprojectevenifthereareuniformcashflows.

(3)Net PresentValue method.(NPV)

NPV=PresentValueof CashInflows–PresentValueofCashOutflows

The discounting is done by the entity's weighted average cost of capital.Thediscountingfactorsisgiven by: $\frac{n}{(1+i)^1}$

Where

i=rateofinterest per annum

n=no.ofyearsover whichdiscountingismade.

Example.

ZLtd.hastwoprojectsunderconsiderationA& B,eachcosting ₹ 60lacs.

Theprojectsaremutuallyexclusive.LifeforprojectAis4years&projectBis3years.SalvagevalueNILforboth theprojects.TaxRate33.99%.Cost ofCapital is15%.

NetCash Inflow(₹ inLakhs)

Attheendoftheyear	ProjectA	ProjectB	P.V. @15%
1	60	100	0.870
2	110	130	0.756
3	120	50	0.685
4	50	—	0.572

Solution :

Computation of Net Present Value of the Projects.ProjectA(inLakhs)

	Yr1	**Yr.2**	**Yr.3**	**Yr.4**
1.NetCash Inflow	60.00	110.00	120.00	50.00
2.Depreciation	15.00	15.00	15.00	15.00
3.PBT(1–2)	45.00	95.00	105.00	35.00
4.Tax@33.99%	15.30	32.29	35.70	11.90
5.PAT(3–4)	29.70	62.71	69.30	23.10
6.NetCashFlow (PAT+Deprn)	44.70	77.71	84.30	38.10
7.DiscountingFactor	0.870	0.756	0.685	0.572
8.P.V.ofNetCashFlows	38.89	58.75	57.75	21.79

9. TotalP.V.ofNetCashFlow = 177.18

10. P.V.ofCashoutflow(Initial Investment)=60.00

NetPresentValue =117.18

ProjectB

	Yr.1	**Yr. 2**	**Yr.3**
1.NetCash Inflow	100.00	130.00	50.00
2.Depreciation	20.00	20.00	20.00
3.PBT(1–2)	80.0	110.00	30.00
4.Tax@33.99%	27.19	37.39	10.20
5.PAT(3–4)	52.81	72.61	19.80
6.NextCashFlow (PAT+Dep.)	72.81	92.61	39.80
7.DiscountingFactor	0.870	0.756	0.685
8.P.V.ofNextCashFlows	63.345	70.013	27.263

9. TotalP.V.ofCash Inflows =160.621

10. P.V. of Cash Outflows(InitialInvestment) = 60.00

NetPresentValue =**100.621**

AsProject“A”hasahigherNet PresentValue,ithastobetaken up.

MeritsofNetPresentValuemethod

(1) ItrecognisestheTimeValueofMoney.

(2) Itconsiderstotalbenefits duringtheentirelife oftheProject.

(3) Thisisapplicablein case ofmutuallyexclusiveProjects.

(4) SinceitisbasedontheassumptionsofcashflowsithelpsindeterminingShareholdersWealth.

DemeritsofNetPresentValuemethod

(1) Thisisnotanabsolutemeasure.

(2) Desiredrateofreturnmayvaryfrom timeto timedueto changesin costofcapital.

(3) ThisMethodisnoteffectivewhen thereisdisparityineconomiclifeoftheprojects.

(4) Moreemphasisonnetpresentvalues. Initialinvestmentisnotgivendueimportance.

(4) ProfitabilityIndexmethod(PI)

ProfitabilityIndex= P.V.ofcashoutflow / P.V. of cash inflowIf P.I>1, project isaccepted

P.I<1, project isrejected

TheProfitabilityIndex (PI) signifiespresentvalueofinflowperrupeeofoutflow.Ithelpsto compare projects involving different amounts of initial investments**.Example**

Initialinvestment ₹ 20lacs.Expectedannualcashflows ₹ 6lacsfor10years.CostofCapital@15%.

CalculateProfitabilityIndex.

Solution:

Cumulativediscountingfactor@15% for10years=5.019

P.V.ofinflows=6.00×5.019= ₹ 30.114 lacs.

$$\text{ProfitabilityIndex}=\frac{\text{P.V. ofcashoutflow}}{\text{P.V.ofcashinflow}}$$

$$\text{ProfitabilityIndex}=\frac{30.114}{20}=1.51$$

Decision:Theprojectshouldbeaccepted.

(5) InternalRateofReturn method(IRR)

Internal Rate of Return is a percentage discount rate applied in capital investment decisionswhichbringsthecostofaprojectanditsexpectedfuturecashflowsintoequality,i.e.,NPViszero.

Example.

Project Cost Rs.

1,10,000CashInflows:

Year1	₹ 60,000
"2	₹ 20,000
"3	₹10,000
"4	₹ 50,000

Calculatethe InternalRateof Return.

Solution:

InternalRateofReturnwillbecalculatedbythetrialanderrormethod.Thecashflowisnot uniform.Tohaveanapproximateideaaboutsuchrate,wecancalculatethe"Factor".Itrepresentthesamerela tionshipofinvestment andcashinflowsin caseofpayback calculation*i.e.*

F= I/C

WhereF=Factor

I=Originalinvestment

C=AverageCashinflow perannum

Factorfortheproject= $\frac{110000}{35000}$ =3.14.

Thefactorwillbelocatedfromthetable"P.V.ofanAnnuityof ₹ 1"representingnumberofye arscorrespondingto estimated useful lifeoftheasset.

Theapproximatevalueof3.14islocatedagainst 10%in4years.

Wewillnowapply10% and 12%toget (+)NPV and(–) NPV[WhichmeansIRRliesin between]

Year	**CashInflows** ₹	**P.V.@10%**	**DCFAT** ₹	**P.V.@12%**	**DCFAT** (₹
1	60,000	0.909	54,540	0.893	53,580
2	20,000	0.826	16,520	0.797	15,940
3	10,000	0.751	7,510	0.712	7,120
4	50,000	0.683	34,150	0.636	31,800
P.V.ofInflows			**1,12,720**		**1,08,440**
Less:InitialInvestment			1,10,000		1,10,000
NPV			**2,720**		**(1,560)**

Graphically,

	For2%, Difference=4,280	
	↓	↓
	10%	12%
NPV	2,720	(1560)

IRR may be calculated in two ways

:ForwardMethod:Taking10%,(+)NPV

$$IRR=10\%+\frac{NPVat10\%}{TotalDifference}\times Differenceinrate$$

$$IRR=10\%+\frac{2720}{4280}\times 2\%$$

=10%+1.27%=11.27%

BackwardMethod:Taking12%,(–)NPV

$$IRR=12\%+\frac{(1560)}{4280}\times 2\%$$

=12%–0.73%=11.27%

Thedecisionruleforthe internalrateofreturnistoinvestin aprojectifitsrateofreturnisgreaterthanitscost ofcapital.

Forindependentprojectsandsituationsinvolvingnocapitalrationing,then :

Situation	**Signifies**	**Decision**
IRR=CostofCapital	the investment is expectednot to change shareholderwealth.	Indifferent betweenAccepting&R ejecting
IRR>CostofCapital	Theinvestmentisexpectedto increase shareholderswealth	Accept
IRR<CostofCapital	Theinvestmentisexpectedt o decrease shareholderswealth	Reject

MeritsofInternalRateof Returnmethod:

(i) TheTimeValueof Moneyisconsidered.

(ii) Allcashflowsinthe projectareconsidered.

DemeritsofInternalRateofReturnmethod

(i) PossibilityofmultipleIRR,interpretation maybedifficult.

(ii) Iftwoprojectswithdifferentinflow/outflowpatternsarecompared,IRRwillleadtopeculiarsituations.

(iii) Ifmutually exclusiveprojectswithdifferentinvestments,aprojectwithhigherinvestmentbutlowerIRRcontributesmoreintermsofabsoluteNPVandincreasesthesshareholders'wealth.

Whenevaluatingmutuallyexclusiveprojects,theonewiththehighestIRRmaynotbetheonewith thebest NPV.

TheconflictbetweenNPV&IRRfortheevaluationofmutuallyexclusiveprojectsisduetothereinvestment assumption:

- NPVassumescash flowsreinvested atthecost ofcapital.

-IRRassumescashflows reinvestedattheinternal rateofreturn.

Thereinvestmentassumptionmaycausedifferentdecisionsdueto:

- Timingdifferenceofcashflows.

- Differenceinscaleofoperations.

-Projectlifedisparity.

(6) Net Terminal Value method

(NTV)Assumption:

(1) Each cashflowisreinvestedinanotherprojectatapredeterminedrate ofinterest.

(2) Each cash inflow is reinvested elsewhere immediately after the completion of the project.Decision-making

If the P.V. of Sum Total of the Compound reinvested cash flows is greater than the P.V. oftheoutflowsoftheprojectunderconsideration, theproject willbeacceptedotherwisenot.

Example:

OriginalInvestment	₹ 40,000
Life of the	4years
projectCashInflows	₹ 25,000for4years
CostofCapital	10%p.a.

Expectedinterestrates atwhichthecashinflows willbereinvested:

Year-end	1	2	3	4
%	8	8	8	8

Solution:

Firstofall,itisnecessarytofindoutthetotalcompoundedsumwhichwillbediscountedbacktothepresent value.

Year	Cash Inflows (₹)	Rate of Int.(%)	Yrs. ofInvestment (₹)	Compounding Factor	TotalCompounding Sum (₹)
1	25,000	8	3	1.260	31,500
2	25,000	8	2	1.166	29,150
3	25,000	8	1	1.080	27,000
4	25,000	8	0	1.000	25,000

Present Value of the sum of compounded values by applying the discount rate @

$$\frac{10\%\text{CompoundedValueofCashInflow}}{(1+i)n} = \frac{112650}{(1.10)4} =$$

=1,12,650 × 0.683 =76,940/-

[0.683 beingtheP.V.of ₹ 1receivableafter4years]

NTV=76,940-40,000.=36940

Decision:Thepresentvalueofreinvestedcashflows,i.e., ₹ 76,940isgreaterthantheoriginalcashoutlayof ₹ 40,000.

Theprojectshouldbeacceptedaspertheterminalvaluecriterion.

UNIT -III
FINANCINGDECISION

Thefinancingdecisionrelatestothecompositionofrelativeproportionofvarioussourcesoffinance. Thesourcescould be:

1. **Shareholdersfund**:Equitysharecapital,Preferencesharecapital,Accumulatedprofits.
2. **Borrowingfromoutside**

agencies:Debentures,LoansfromFinancialInstitutions.Whetherthecompanieschooseshareholders fundsorborrowedfundsoracombinationofboth, eachtypeoffundcarriesacost.

Thecostofequityistheminimumreturntheshareholderswouldhavereceivediftheyhadinvestedelsewhere.Borrowedfunds cost involve interest payment.

Bothtypesoffundsincurcostandthisisthecostofcapitaltothecompany.Thismeans,costofcapital istheminimum return expected bythecompany.

COSTOFCAPITALANDFINANCINGDECISION.

James C. Van Horne: The cost of capital is "a cut-off rate for the allocation of capital toinvestments of projects. It is the rate of return on a project that will leave unchanged the marketpriceofthestock".

Soloman Ezra : "Cost of Capital is the minimum required rate of earnings or the cut-off rate ofcapitalexpenditure".

Itisthediscountrate/minimum rateofreturn/opportunitycost ofaninvestment.

IMPORTANCEOFCOSTOFCAPITAL:

The cost of capital is very important in financial management and plays a crucial role in thefollowingareas:

i) **Capital budgeting decisions**: The cost of capital is used for discounting cash flows under NetPresentValuemethodforinvestmentproposals.So,itisveryusefulincapitalbudgetingdecisions.

ii) **Capital structure decisions:** An optimal capital structure is that structure at which the value ofthe firm is maximum and cost of capital is the lowest. So, cost of capital is crucial in designingoptimalcapital structure.

iii) **Evaluationoffinancialperformance**:Costofcapitalisusedtoevaluatethefinancialperformance of top management. The actual profitability is compared to the expected and actualcostofcapital offunds and ifprofit isgreaterthan thecost

ofcapital theperformancemaybesaidto besatisfactory.

iv) **Otherfinancialdecisions**:Costofcapitalisalsousefulinmaking suchotherfinancialdecisionsasdividend policy,capitalization ofprofits,makingtherightsissue,etc.

Explicit and Implicit Cost: *Explicit cost* of any source of finance is the discount rate whichequates the present value of cash inflows with the present value of cash outflows. It is the

internalrateofreturn.

Implicit cost also known as the opportunity cost is the opportunity foregone in order to take up aparticular project. For example, the implicit cost of retained earrings is the rate of return availabletoshareholdersbyinvestingthefundselsewhere.

ESTIMATIONOFCOMPONENTSOFCOSTOFCAPITAL

Componentsofcostofcapitalincludesindividualsourceoffinanceinbusiness.Fromtheviewpointofc apitalbudgetingdecisions,thelongtermsourcesoffundsarerelevantasthey constitutethemajorsourcesther offinancingthe fixedassets.Incalculatingthe costofcapital, eforecomponentsinclude-

1. Longterm debt (includingDebentures)
2. Preferencecapital
3. EquityCapital.
4. RetainedEarnings
5. WeightedAverageCostofCapital
6. MarginalCostofCapital

1. Costof Debt(kd)(Longtermdebt(includingDebentures))

Debtmaybeperpetualorredeemabledebt.Moreover,itmaybeissuedatpar,atpremiumordiscount.Th ecomputation ofcost ofdebtin each isexplained below.

Perpetual/irredeemabledebt:

K_d= Costof debtbeforetax=I/NP

K_d=Costofdebt; I=interest;NP=NetProceeds

k_d(after-tax)= $\frac{I}{NP}$(1-t)

Wheret=taxrate

Example

YLtdissued ₹ 2,00,000,9%debenturesatapremiumof10%.Thecostsoffloatationare2%.Thetaxrateis 50%. Computetheaftertaxcost ofdebt.

Answer: kd (after-tax) = $\frac{I}{NP}$ (1-t)= $\frac{Rs.18000}{Rs.215600}$ (1-0.5) =4.17%

[NetProceeds =2₹00,000 +20,000–(2/100×2,20,000)]

Redeemabledebt

Thedebtrepayable after acertainperiodisknownasredeemabledebt.

i) Before-taxcostoffebt= $\frac{I+1/n()P-NP}{\frac{1}{2}()P+NP}$

I=interest :P =proceedsatpar;

NP=netproceeds;n =No.ofyearsin whichdebtisto beredeemed

ii) Aftertaxcostofdebt=Before–taxcostofdebt ×(1-t)

Example

AcompanyissuedRs.1,00,000,10%redeembledebenturesatadiscountof5%.Thecostof floatation amount to Rs. 3,000. The debentures are redeemable after 5 years. Compute before – taxand after– taxcost ofdebt.Thetaxrateis50%.

Solution:

$$\text{Before-taxcostoffebt}=\frac{I+1/n()P-NP}{\frac{1}{2}()P+NP}$$

$$\text{Before-taxcostof febt}=\frac{10000+1/5(100000-92000)}{\frac{1}{2}(100000+92000)}=12.08\%$$

[NP =1,00,000 – 5,000 – 3,000 =92,000]

Aftertaxcost ofdebt = Before– taxcost x(1-t)=12.08X(1-.5)=6.04%

2.CostofPreferenceCapital (kP)

In case of preference share dividend are payable at a fixed rate. However, the dividends areallowed to be deducted for computation of tax. So no adjustment for tax is required. Just likedebentures, preference share may be perpetual or redeemable. Further, they may be issued at par,premiumordiscount.

PerpetualPreferenceCapital

i) Ifissuedatpar;Kp= D/P

Kp = Cost of preference

capitalD = Annual preference

dividendP=Proceeds at parvalue

ii) Ifissuedatpremiumordiscount

Kp=D/NP Where NP=NetProceeds.

Example:

A company issued 10,000, 10% preference share of. 10 each, Cost of issue is . 2 pershare. Calculate cost of capital if these shares are issued (a) at par, (b) at 10% premium, and (c)at5%discount.

Solutions:Costofpreferencecapital,(Kp)=D/NP

a) Whenissuedatpar :

$$Kp=\frac{10000}{100000-20000}\times 100=12.5\%$$

[Cost ofissue=10,000 × ₹ 2=Rs.20,000]

b) Whenissuedat10% premium

$$Kp=\frac{10000}{100000+10000-20000}\times 100=11.11\%$$

c) Whenissuedat 5% discount:

$$Kp=\frac{10000}{100000-5000-20000}\times 100=13.33\%$$

3.Costof Equitycapital

Cost of Equity is the expected rate of return by the equity shareholders. Some argue that, asthereisnolegalcompulsionforpayment,equitycapitaldoesnotinvolveanycost.Butitisnot correct.Equityshareholders normallyexpectsomedividendfromthe companywhilemaking investmentinshares.Thus,therateofreturnexpectedbythembecomesthecostofequity.

Conceptually, cost of equity share capital may be defined as the minimum rate of return that a firmmust earn on the equity part of total investment in a project in order to leave unchanged the marketprice of such shares. For the determination of cost of equity capital it may be divided into twocategories:

i) Externalequityornewissueofequityshares.

ii) Retainedearnings.

Thecost ofexternal equitycan becomputedasper thefollowingapproaches:

DividendYield/DividendPriceApproach:Accordingtothisapproach,thecostofequity willbethatrateofexpected dividendswhichwillmaintainthepresent marketpriceofequity shares. It is calculated with the following formula

:Ke=D/NP (fornewequityshares)

Or

Ke=D/MP(for existingshares)

Where,

Ke= Cost of equity

D = Expected dividend per

shareNP=Netproceedspershare

MP=Marketpricepershare

Thisapproachrightly recognizestheimportanceofdividends. However,itignoresthe importanceofretainedearningsonthemarketpriceofequityshares.Thismethodissuitableonlywhenthecomp anyhasstable earningsand stabledividendpolicyoveraperiod oftime.

Example:

Acompanyissues,10,000equitysharesof ₹ .100eachata premiumof10%.The company has been paying 20% dividend to equity shareholders for the past five years and expectedto maintain the same in the future also. Compute cost of equity capital. Will it make any differenceifthemarket priceofequityshare₹is150 ?

Solution:

$$Ke=\frac{D}{NP}\times 100=\frac{20}{110}\times 100=18.18\%$$

Ifthemarketpricepershare=Rs.150

$$Ke=\frac{D}{MP}\times 100=\frac{20}{150}\times 10=13.33\%$$

DividendyieldplusGrowth individendmethods

According to this method, the cost of equity is determined on the basis of the expected dividendrate plus the rate of growth in dividend. This method is used when dividends are expected to growataconstant rate.

Costofequityiscalculated as:

Ke = D1 /NP +g (for new equity issue)Where,

D1=expecteddividendpershareattheend ofthe year.[D1 = Do(1+g)]

NP=netproceedspershare

g = growth in dividend for existing share is calculated as:D1/ MP +g

Where,

MP=market pricepershare.

Example:

ABC Ltd plans to issue 1,00,000 new equity share ₹of10 each at par. The floatation costs areexpected to be 5% of the share price. The company pays a dividend ₹of 1 per share and thegrowth rate in dividend is expected to be 5%. Compute the cost of new equity share. If the currentmarketpri₹eis15, computethecost ofexistingequityshare.

Solution:

Cost of new equity shares = (Ke) = D/NP +gKe=1 / (10-0.5) +0.05=1 / 9.5 +0.05

=0.01053 +0.05

=0.1553 or15.53%

Cost of existing equity share: ke = D / MP + gKe=1/ ₹ 15 +0.05=0.0667 or11.67%

EarningsYieldMethod–

Accordingtothisapproach,thecostofequityisthediscountratethatcapitalizesastreamof future earnings to evaluate the shareholdings. It is computed by taking earnings per share (EPS)intoconsideration.It iscalculated as:

i) Ke=Earningspershare/Net proceeds=EPS /NP[Fornewshare]

ii) Ke=EPS/MP[Forexistingequity]

Example

XYZLtdisplanningforanexpenditureof ₹ 120lakhsforitsexpansionprogramme. Number of existing equity shares are 20 lakhs and the market value of equity shares is60₹. It hasnet earnings of180 ₹lakhs. Compute the cost of existing equity share and the cost of new equitycapital assuming that new share will be issued at a price of 52 per ₹share and the costs of newissuewill be2 pershare. ₹

Solutions:

a) Cost ofexistingequity=(Ke)= $\frac{EPS}{MP}$

Earningspershare(EPS)= $\frac{18000000}{2000000}$ =9 ₹

Ke=9/60=0.15 or15%

b) Costofnewequitycapital (Ke) =EPS/NP=9/52-2=9/50=0.18 or18%

4.CostofRetainedEarnings(Kr)

Retained earnings refer to undistributed profits of a firm. Out of the total earnings, firmsgenerally distribute only part of them in the form of dividends and the rest will be retained withinthe firms. Since no dividend is required to paid on retained earnings, it is stated that 'retainedearningscarrynocost'.Butthisapproachisnotappropriate.Retainedearningshavetheopportunit y cost of dividends in alternative investment, which becomes cost of retained earnings.Hence,shareholdersexpect a return on retainedearningsat least equity.

Kr=Ke=D/NP+g

However, while calculating cost of retained earnings, two adjustments should be made :a)Income-tax adjustment as the shareholders are to pay some income tax out of dividends, and b)adjustment for brokerage cost as the shareholders should incur some brokerage cost while investdividendincome.Therefore,afterthese adjustments,costofretainedearningsiscalculatedas:

Kr = Ke (1-t)(1-b) Where, Kr = cost of retained

earningsKe=Cost ofequity

t=rateoftax

b=cost ofpurchasingnewsecuritiesorbrokeragecost.

Example

Afirm'scostofequity(Ke)is18%,theaverageincometaxrateofshareholdersis30%and brokerage cost of 2% is excepted to be incurred while investing their dividends in alternativesecurities.Computethe cost ofretained earnings.

Solution:

Costofretainedearnings=(Kr)=Ke(1-t)(1-b)=18(1-.30)(1-.02)

=18x.7x.98=12.35%

5. WeightedAverageCostof Capital

It is the average of the costs of various sources of financing. It is also known as compositeoroverall oraveragecost ofcapital.

After computing the cost of individual sources of finance, the weighted average cost ofcapital is calculated by putting weights in the proportion of the various sources of funds to the totalfunds. Weighted average cost of capital is computed by using either of the following two types ofweights:

1) Marketvalue2)Book Value

Market value weights are sometimes preferred to the book value weights as the marketvalue represents the true value of the investors. However, market value weights suffer from thefollowinglimitations:

i) Marketvaluearesubjecttofrequentfluctuations.

ii) Equity capital gets more importance, with the use of market value

weights.Moreover,book valuesarereadilyavailable.

Averagecostofcapitaliscomputedasfollowings:

$$Kw = \frac{\sum X}{\sum w}$$

Where, Kw = weighted average cost of

capitalX=costofspecificsourcesoffinance

W=weights(proportionsofspecificsourcesoffinanceinthetotal)

Thefollowingstepsareinvolvedinthecomputationofweightedaveragecostofcapital:

i) Multiplythe costofeachsourceswiththecorrespondingweight.

ii) Addalltheseweightedcostssothatweighted averagecostofcapitalis obtained.

6. MarginalCostof Capital

Anaveragecostisthecombinedcostorweightedaveragecostofvarioussourcesofcapital. Marginal cost refers to the average cost of capital of new or additional funds required by afirm.Itisthemarginalcostwhichshouldbetakenintoconsiderationininvestmentdecisions.

Example:WACCandMarginalWACCComputation

XYZLtd.(in40%Taxbracket)hasthefollowingbookvaluecapitalstructure —

EquityCapital(insharesof ₹ 10each,fullypaid-up at par)	₹15Crores
11%PreferneceCapital(insharesof ₹ 100each,fullypaid-upatpar)	₹ 1Crore
RetainedEarnings	₹ 20Crores
13.5%Debentures(of ₹ 100each)	₹ 10Crores
15%Term Loans	₹ 12.5Crores

ThenextexpecteddividendonEquitySharesisRs.3.60pershare.Dividendsareexpectedtogrowat 7%and theMarket pricepershareis ₹ 40.

-PreferenceStock,redeemableaftertenyears,iscurrentlysellingat ₹ 75pershare.

-Debentures,redeemableafter6years, aresellingat ₹ 80perdebenture.

Required:

1. ComputethepresentWACCusing(a)BookValueProportionsProportions and(b)MarketValue .
2. ComputetheweightedMarginalCostofCapitaliftheCompanyraises ₹ 10Coresnextyear,given the followinginformation—
   - Theamount willberaisedbyequityand debtinequalproportions.
   - TheCompanyexpectstoretain ₹ 1.5Coresearningsnext year.
   - Theadditionalissueof EquityShareswillresultinthenetpricepershare beingfixedat ₹ 32.
   - TheDebtcapitalraisedbywayofTermLoanswillcost15%forthefirst ₹ .2.5Coresand16%forthe next ₹ 2.5 Cores.

Solution:

1. Computation of Cost of Equity under Dividend

ApproachPresentCost ofEquityunder Dividend Approach:

$$Ke=\frac{\text{Dividend per share}}{\text{Marketpricepershare}}+g\ (\text{GrowthRate})=Ke=\frac{3.60}{40.00}+7\%=16.00\%$$

RevisedCostofEquityunder Dividend Approach:

$$Ke=\frac{\text{Dividend per share}}{\text{Marketpricepershare}}+g\ (\text{GrowthRate})=Ke=\frac{3.60}{32.00}+7\%=18.25\%$$

2. ComputationofCostofPreferenceShareCapital

$$\frac{\text{PreferenceDividend+(RV-NetProceeds)₹}}{\text{RV+NetProceeds}\div 2} = \frac{[11+(100-75)\frac{1}{4}0]}{[100+75]\div 2} = 15.43\%$$

3. ComputationofCostofDebt

PresentCostofDebentures:

$$\frac{\text{PreferenceDividend+(RV-NetProceeds)₹}}{\text{RV+NetProceeds}\div 2} = \frac{[13.5\times 60\%+(100-80)\frac{6}{}]}{[100+80]\div 2} = 12.70\%$$

Present Cost of Term Loans = Kd = Interest (100%—Tax Rate) = 15% × (100%–40%) = 9.00%.Cost of Additional Debt for first Rs. 2.50 Crores=Interest (100%–Tax Rate) = 15%×60%= 9.00%CosfoAdditionalDebtfornextRs.2.50Crores=Interest(100%–Tax Rate)=16%×60%=9.60%.

3. ComputationofPresentWACCbaseonBookValueProportions

Particulars	Amount	Proportion	IndividualCost	WACC
EquityCapital	₹15Crore	15/58.5	16.00%	4.10%
PreferenceCapital	₹ 1Crore	1/58.5	15.43%	0.26%
RetainedEarnings	₹ 20Crores	20/58.5	16.00%	5.47%
Debentures	₹ 10Crores	10/58.5	12.70%	2.17%
Loans	₹ 12.5Crores	12.5/58.5	9.00%	1.92%
Total	₹ 58.5Crores	100%		K0=13.92%

4. ComputationofPresentWACCbaseonMarketValueProportions

Particulars	Amount	Proportion	IndividualCost	WACC
EquityCapital	₹ 60Crores	60/81.25	16.00%	11.82%
PreferenceCapital	₹.0.75Crore			
RetainedEarnings	Notapplicable*	0.75/81.25	15.43%	0.14%
Debentures	₹ 8Crores	8/81.25	12.70%	1.25%
Loans	₹ 12.5Crores	12.5/81.25	9.00%	1.38%
Total	**₹ 81.25Crores**	**100%**		**K0=14.59%**

*RetainedEarningsIncludedinMarketValueofEquityShareCapital,hencenotapplicable

6. ComputationofMarginalCostof Capital

MarginalCostofCapitaliscomputedindifferentsegmentsasunder—

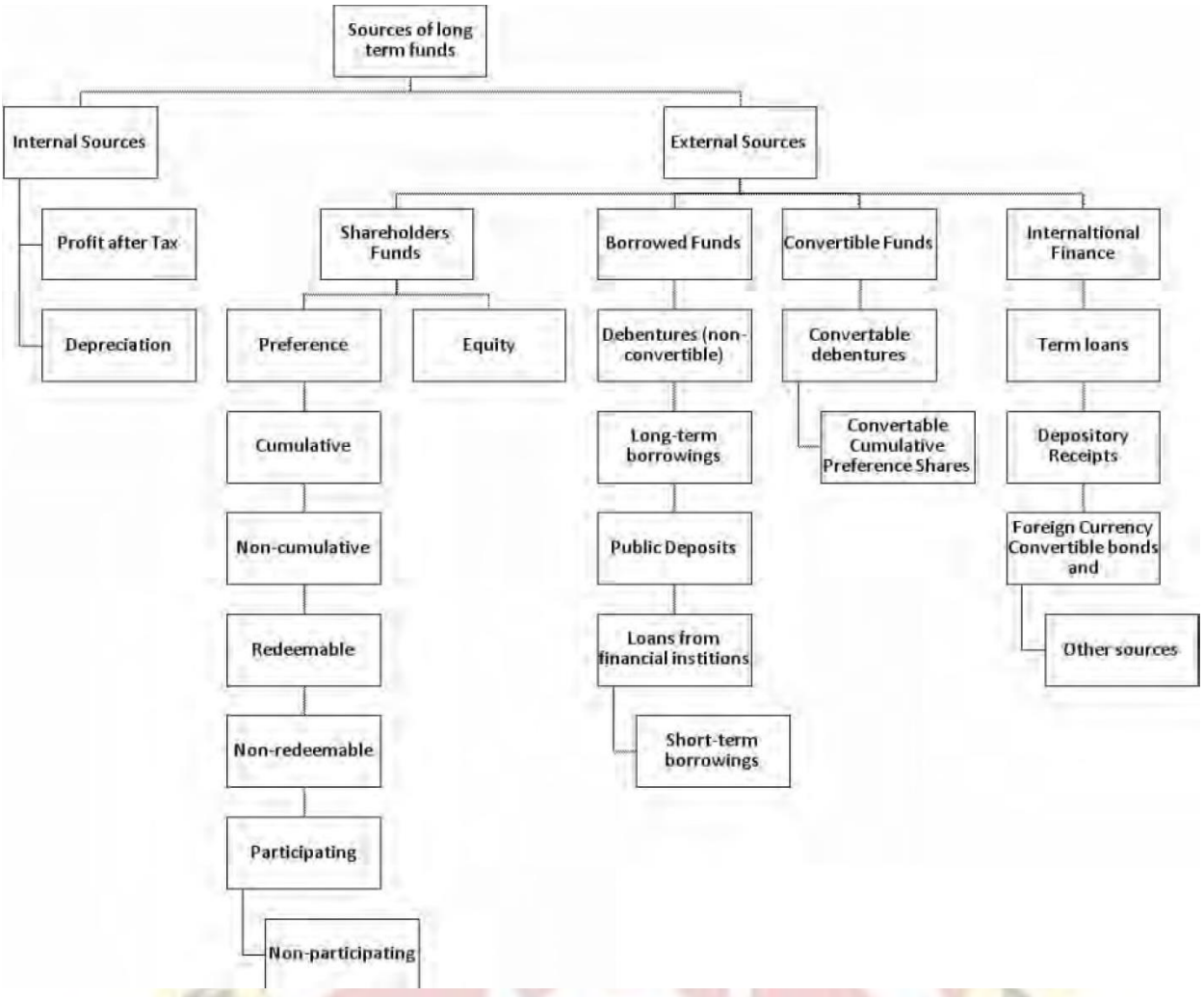
For the first ₹1.5 Crores of Equity and Debt each — since retained earnings are ₹1.5 Cores. Forthe next 1 ₹Crores of Debt and Equity each — since cost of debt changes beyond ₹. 2.5 Croresdebt.Forthebalance2.5 CroresofDebt and Equityeach.

Particulars	Debt	Equity	Total	Individual Cost	MarginalWACC
First1.5 Crores	₹1.5 Crores	₹1.5 Crores	₹ 3Crores	Kd=9.00% Ke=16.00%	(9.00%×50%)+(16.00%×50%) =12.50%
Next ₹ 1.5 Crores	₹1Crores	₹ 1Crores	₹ 2Crores	Kd=9.60% Ke=18.25%	(9.60%×50%)+(18.25%×50%) =13.93%
Balance amount	₹2.5Crores	₹ 2.5Crores	₹5 Crores	Kd=9.60% Ke=18.25%	(9.60%×50%)+(18.25%×50%) =13.93%

LONGTERMSOURCESOFFUNDS:

Companies raise long term funds from the capital markets. Funds available for a period oflessthanoneyearareshorttermfunds.Withtheincreaseincross-bordertransactions,international sources of funds are also available. An effective trade-off between the domestic fundsandinternationalfunds shallcontributetowards increasingprofitabilityandwealthmaximisation

Toenabletheinvestments,creationofassetsandinfrastructure,longter anorganisationrequire m sourcesoffunds. Theyare:



1. EquityShareCapital

Equity share capital is a basic source of finance for any Company. It represents the ownershipinterest in the company. The characteristics of equity share capital are a direct consequence of itsposition in the company's control, income and assets. Equity share capital does not have anymaturity nor there any compulsion to pay dividend on it. The equity share capital provides
funds,moreorless,onapermanentbasis.Italsoworksasabaseforcreatingthedebtandloancapacityofthefirm. The advantagesand limitations ofequitysharecapital maybesummarized asfollows

AdvantagesofEquityShareFinancing

a. Since equity shares do not mature, it is a permanent source of fund. However, a company, if it sodesires,canretiresharesthroughbuy-backaspertheguidelinesissued bytheSEBI.

b. The new equity share capital increases the corporate flexibility from the point of view of capitalstructureplanning.Onesuchstrategymaybetoretiredebtfinancingoutofthefundsreceivedfromtheissueofequitycapital.

c. Equitysharecapitaldoesnotinvolveanymandatorypaymentstoshareholders.

d. It may be possible to make further issue of share capital by using a right offering. In general,selling right shares involves no change in the relationship between ownership and control. Existingshareholderscan maintaintheirproportionateholdingbyexercisingtheirpre-emptiveright.

LimitationsofEquityShareFinancing

a. Theequitysharecapitalhasthehighestspecificcostofcapitalamongallthesources.Thisnecessitatesthattheinvestmentproposalsshouldalsohaveequallyhighrateofreturn.

b. Equity dividends are paid to the shareholders out of after-tax profits. These dividends are not taxdeductible,ratherimplyaburden ofCorporateDividendtaxon thecompany.

c. Attimes,thenewissueofequitycapitalmayreducetheEPSandthusmayhaveanadverseeffecton themarket priceoftheequityshare.

d. ExcessiveissueofequityshareandilutetheownershipoftheCompany.

2. PreferenceShareCapital

The preference share capital is also owner's capital but has a maturity period. In India, thepreference shares must be redeemed within a maximum period of 20 years from the date of issue.The rate of dividend payable on preference shares is also fixed. As against the equity share capital,thepreferenceshareshavetworeferences:(i)Preferencewithrespecttopaymentofdividend,and (ii)Preferencewithreferencetorepaymentof capitalincaseofliquidationofcompany.

However, the preference share capital represents an ownership interest and not a liability ofthe company. The preference shareholders have the right to receive dividends in priority over theequity shareholders. Indeed, it is this preference which distinguishes preference shares from equityshares. A dividend need not necessarily be paid on either type of shares. However, if the directorswant to pay equity dividend, then the full dividend due on the preference shares must be paid first.Failure to meet commitment of preference dividend is not a ground for liquidation. The advantagesanddisadvantagesofthepreferencesharecapital areasfollows:

AdvantagesofPreferenceShareFinancing

a. Thepreference sharescarrylimited votingrightthoughtheyarea partofthe capital.Thus, thesedonotpresent amajorcontrolorownershipproblem aslongasthedividendsarepaid tothem.

b. Asaninstrumentoffinancing,thecostofcapitalofpreferencesharesislessthanthatofequityshares.

c. Thepreferencesharefinancingmayalsoprovideahedgeagainstinflationbecausethefixedfinancialcommitment which isunaffected bytheinflation.

d. Asthereisnolegalcompulsiontopaypreferencedividend,acompanydoesnotfaceliquidationorotherlegal proceedings ifit failsto paythepreferencedividends.

LimitationsofPreferenceShareFinancing

a. Thecostof capitalofpreferencesharesishigher thancostofdebt.

b. Thoughthereisnocompulsiontopaypreferencedividend,yetthenon-paymentmayadverselyaffectthemarket priceoftheequitysharesand henceaffect thevalueofthefirm.

c. The compulsory redemptionof preference sharesafter 20yearswillentaila substantialcashoutflowfrom thecompany.

d. Ifthecompanyisnotabletoearnareturnatleastequaltothecostofpreferencesharecapital,thenit mayresult indecreasein EPS fortheequityshareholders.

3. Debentures

A bond or a debenture is the basic debt instrument which may be issued by a borrowing companyfor a price which may be less than, equal to or more than the face value. A debenture also carries apromisebythecompanytomakeinterestpaymentstothedebenture-holdersofspecifiedamount,at specified time and also to repay the principal amount at the end of a specified period. Since thedebtinstrumentsareissued keepingin viewtheneedandcashflowprofile of

the company as well as the investor, there have been a variety of debt instruments being issued bycompanies in practice. In all these instruments, the basic features of being in the nature of a loanarenotdispensedwithand,therefore,theseinstrumentshavesomeortheothercommonfeaturesasfollo ws:

(i) CreditInstrument—Adebenture-holderis acreditor of the company and is entitled to receivepaymentsofinterest andtheprincipal and enjoyssomeotherrights.

(ii) InterestRate—Inmostofthecases,thedebtsecuritiespromisearateofinterestpayableperiodicallyto thedebt holders.Therateofinterestisalsodenoted ascouponrate.

(iii) Collateral—
Debtissuemayormaynotbesecuredand,therefore,debenturesorothersuchsecuritiesmaybecalled secured debenturesorunsecured debentures.

(iv) MaturityDate—
Alldebtinstrumentshaveafixedmaturitydate,whenthesewillberepaidorredeemedin themannerspecified.

(v) VotingRights—Asthedebtholdersarecreditorsofthecompany,theydonothaveanyvotingrightin normal situations.

(vi) FaceValue— everydebt instrumenthasafacevalueaswell asamaturityvalue.

(vii) PriorityinLiquidation—
Incaseofliquidationofthecompany,theclaimofthedebtholdersissettledinpriorityoverallshareholdersan d,generally,otherunsecuredcreditorsalso.

Inpractice,differenttypesofdebentureshavebeenissued.Theseare:

(a) ConvertibleDebentures—
Inthiscase,thedebenturesareconverted,fullyorpartially,intoequitysharessometimeafterthedateofissue .

(b) Non-convertible Debentures—
Thesedebenturesremainadebtsecuritytillmaturity.Interestispaidon thesedebenturesaspertermsandconditions.

(c) InnovativeDebentures—
Companieshavecomeforwardtoissueadebtsecuritywithdifferentattractiveand innovativefeatures.Someoftheseare-Secured

PremiumNotes,OptionallyConvertibleDebentures,TripleOptionConvertibleDebentures,etc.Financia

lInstitutions such asIDBIhaveissuedDeep DiscountBonds(DDBs)fromtimetotimetoprocurefundsforalongerperiod.

4.LeaseandHirePurchase

Insteadof procuring funds,andpurchasing theequipment,a firmcanacquire the assetitselfonlease.Inthiscase,theassetisfinancedbythelessorbutthelesseegetstheassetforuse.In case of hire purchase, the assets are acquired on credit and payments are made as per terms andconditions.

5. TermLoans

Thisisalsoanimportantsourceof long-termfinancing.Thereare differentfinancialinstitutions (National level as well as State level) which provide financial assistance for taking upprojects.Thesecansbebroadly dividedintoAllIndiaFinancialInstitutionsandStatelevelFinancialInstitutions. TheAllIndia Institutions are:-

i) IndustrialFinanceCorporationofIndia,(IFCI)

ii) IndustrialCreditandInvestmentCorporationinIndia(ICICI),

iii) IndustrialDevelopmentBankof India(IDBI),

iv) LifeInsuranceCorporationofIndia,

v) IndustrialReconstructionCorporationofIndia,

vi) UnitTrustofIndia,

vii) NationalSmallIndustriesCorporationLtd.(NSIC)

ThestatelevelinstitutionsaretheStateFinanceCorporationsandtheStateIndustrialDevelopmentCorporations.

6. OfficialForeignSourceofFinance

1. Foreign Collaboration: In India joint participation of foreign and domestic capital has been quitecommon in recent years. Foreign collaboration could be either in the form of joint participationbetween private firms, or between foreign firms and Indian Government, or between foreigngovernmentsandIndianGovernment.

2. Bilateral Government Funding Arrangement: Generally, advanced countries provide aid in theform of loans and advances, grants, subsidies to governments of under-developed and developingcountries. The aid is provided usually for financing government and public sector projects.
Fundsareprovidedatconcessionaltermsinrespectofcost(interest),maturity,andrepaymentschedule.

3. NRI Deposits and Investments: on-resident Indian have always been making a contribution inIndianeconomy.Governmenthasbeenmakingeffortstoencouragetheirdepositsandinvestments.
Various schemes have been devised which ensure higher returns; procedures havebeen simplified to attract investments in primary and secondary market. Tax incentives are givenoninterest earned and dividends received byNRIs.

4. Loans from International Financial Institutions : International Bank for Reconstruction andDevelopment (IBRD), International Monetary Fund (IMF), Asian Development Bank (ADB),andWorldBank havebeen themajorsourceofexternal financetoIndia.

5. External Commercial Borrowing (CEB) : Our country has also been obtaining foreign capital inthe form of external commercial borrowings from agencies like US EXIM Bank, ECGCof UK,etc.

7.**NonOfficialForeignSourceofFinance:**

ForeignDirectInvestment(FDI)

Foreign direct investment is one of the most important sources of foreign investment indeveloping countries like India. It is seen as a means to supplement domestic investment forachievingahigherlevelofgrowthanddevelopment.FDIispermittedundertheformsofinvestments.

1. Through financial collaborations/capital/equityparticipation;

2. ThroughJointventuresandtechnical collaborations;

3. Throughcapitalmarkets(EuroIssues);

4. Throughprivateplacementsorpreferentialallotment.

Capital participation / financial collaboration refers to the foreign partner's stake in thecapital of the receiving country's companies while technical collaboration refers to such facilitiesprovided by foreign partner as licencing, trade marks and patents (against which he gets lump sumfeeorroyaltypaymentsforspecified period); technical servicesetc.

Frominvestors'pointof view,theFDIinflowscan beclassifiedintothefollowinggroups.

(a) Market seeking : The investors are attracted by the size of the local market, which depends ontheincomeofthecountryand itsgrowthrate.

(b) Lower cost : Investors are more cost-conscious. They are influenced by infrastructure facilitiesandlabourcosts.

(c) Location and other factors : Technological status of a country, brand name, goodwill enjoyedby the local firms, favourable location, openness of the economy, policies of the government andintellectual property protection granted by the government are some of the factors that attractinvestorsto undertakeinvestments.

SHORTTERMFUNDS:

Short term funds are usually required for working capital; to operate the project after it iscompleted. The working capital consists of the margin to be provided by the entrepreneur and thebulk of the balance is borrowed from a commercial bank or some other source as short termfinance.Themargintobeprovidedbytheentrepreneurisincludedintheprojectcostestimatesand is in financed from the various means of financing discussed earlier. The main sources ofworkingcapital are:-

1. Commercialbanks,

2. The type of debentures issued for meeting working capital requirements are usually thenon-convertibledebentures.

3. PublicDeposit
4. CommercialPaper
5. Supplier'Credit
6. Foreigncurrencyfundsetc.

CAPITALISATION,CAPITALSTRUCTURE,FINANCIALSTRUCTURE

Capitalisation is a quantitative aspect of the financial planning of an enterprise, capitalstructure is concerned with the qualitative aspect. Capitalisation refers to the total amount ofsecurities issued by a company while capital structure refers to the kind of securities and theproportionate amount that make up capitalisation. Financial structure refers to all the financialresourcesmarshalledbythefirm ,shortaswell aslong–term,andall formsofdebtandequity.

CapitalandCapitalisation

The termcapitalreferstothe totalinvestmentof a company inmoney,tangible andintangible assets. It is the total wealth of a company . The term Capitalisation is used only inrelation to companies and not in relation to partner ship firms or sole- proprietary organisations.Capitalisationreferstotheparvalueofsecuritiesi.e.share, debenture&reserves.

Over Capitalisation-It refers to that state of affairs where earning of a company do notjustifytheamount ofcapital invested in itsbusiness.

Under Capitalisation-It occurs when a companies actual capitalisation is lower than itspropercapitalisation aswarranted byitsearningcapacity.

FairCapitalisation-Itisneitherovercapitalisationnorundercapitalisation.

The term capital structure refers to the relationship between the various long–term formsof financing such as debenture ,preference share capital and equity share capital .Financing thefirm's asset is a very crucial problem in every business and as a general rule there should be aproper mix of debt and equity capital in financing the firms assets. The use of long term fixedinterestbearingdebtandpreferencesharecapitalalongwithequity shareiscalledfinancialleverageortradingonequity.

Capital gearing means the ratio between the various types of securities in the capitalstructure of the company .A company is said to be in high gear ,when it has a proportionatelyhigher/large issue of debentures and preference shares for raising the long term resources ,whereaslow-gearstands foraproportionatelylargeissueofequityshares.

CapitalStructureTheory

The capital structure of a company refers to a combination of the long-term finances usedby the firm. The theory of capital structure is closely related to the firm's cost of capital. Thedecision regarding the capital structure or the financial leverage or the financing is based on theobjective of achieving the maximization of shareholders wealth. To design capital structure, weshouldconsiderthefollowingtwo propositions:

(i) Wealthmaximizationisattained.

(ii) Bestapproximationtotheoptimalcapitalstructure.

FactorsDeterminingCapitalStructure

(1) MinimizationofRisk:

(a) Capitalstructuremustbeconsistentwithbusinessrisk.

(b) Itshouldresultinacertainleveloffinancialrisk.

(2) Control:Itshouldreflectthemanagement'sphilosophyofcontroloverthefirm.

(3) Flexibility :Itreferstotheability ofthefirmtomeettherequirementsofthechangingsituations.

(4) Profitability: Itshouldbeprofitablefromtheequityshareholderspointofview.

(5) Solvency : The use of excessive debt may threaten the solvency of the company.(6)FinancialleverageorTradingon equity.

(7) Costofcapital.

(8)Natureandsizeofthe firm.

ProcessofCapitalStructureDecisions

CapitalBudgetingDecision

↓

Long-termsourcesoffunds

↓

CapitalStructureDecision

↓

Debt-Equity

↓

EffectonCostofCapital

↓

Valueofthe Firm

THEORIESOFCAPITALSTRUCTURE:

Equityanddebtcapitalarethetwomajorsourcesoflong-termfundsforafirm.Thetheoriesofcapital structuresuggesttheproportionofequityanddebt inthe capital structure.

Assumptions

(i) Thereareonlytwosourcesoffunds, i.e.,theequityand thedebt, havinga fixedinterest.

(ii) Thetotalassetsofthefirmaregivenandtherewouldbenochangeintheinvestmentdecisionsofthefirm.

(iii) EBIT(EarningsBeforeInterest& Tax)/NOP(NetOperating Profits)ofthefirmaregivenandisexpected to remain constant.

(iv) RetentionRatioisNIL,i.e.,totalprofitsaredistributedasdividends.[100%dividendpay-outratio]

(v) Thefirmhasa givenbusinessriskwhichisnotaffectedbythefinancingdecision.

(vi) Thereisnocorporateorpersonaltaxes.

(vii) Theinvestorshavethesamesubjectiveprobabilitydistribtuionofexpectedoperatingprofitsofthefirm.

(viii) Thecapitalstructurecanbealteredwithoutincurringtransactioncosts.

Indiscussingthetheories ofcapitalstructure,we

willconsiderthefollowingnotations:E=Market valueoftheEquity

D=Market valueoftheDebt

V = Market value of the Firm = E

+DI=TotalInterestPayments

T=TaxRate

EBIT/NOP=Earningsbefore

InterestandTax/NetOperatingProfitPAT=Profit AfterTax

D0=Dividendat time0(i.e. now)

D1 = Expected dividend at the end of Year

1.Po=CurrentMarket Pricepershare

P1=ExpectedMarketPricepershare at theendofYear1.

DifferentTheoriesofCapitalStructure

(1) Net Income(NI)approach

(2) NetOperatingIncome(NOI)Approach

(3) TraditionalApproach

(4) Modigliani-MillerModel

(a) withouttaxes

(b) withtaxes.

NetIncomeApproach

AssuggestedbyDavidDurand,thistheorystatesthatthereisarelationshipbetweentheCapitalStructureand thevalueofthefirm.

Assumptions

(1) TotalCapitalrequirementofthefirmare givenandremainconstant

(2) Kd <Ke

(3) Kdand Keareconstant

(4) Kodecreaseswiththeincreaseinleverage

Example

	FirmA	FirmB
EarningsBeforeInterestandTax(EBIT)Int	2,00,000	2,00,000
erest(I)	-	50,000
EquityEarnings(Ee)	2,00,000	1,50,000
Cost of Equity	12%	12%
(Ke)CostofDebt(Kd)	10%	10%
MarketValue ofEquity(E)=$\frac{Ee}{Ke}$	16,66,667	12,50,000
MarketValueofDebt(D) $\frac{I}{Kd}$	NIL	5,00,000
TotalValueoftheFirm[E+D]	16,66,667	17,50,000
Overallcostofcapital(K0)$\frac{EBIT}{E+D}$	12%	11.43%

NetOperatingIncome(NOI)Approach

AccordingtoDavidDurand,underNOIapproach,thetotalvalueofthefirmwillnotbeaffectedbythecomposition ofcapital structure.

Assumptions

(1) K0and Kdareconstant.

(2) Kewillchangewiththedegreeofleverage.

(3) Thereisno tax.

Example

A firm has an EBIT of₹5,00,000 and belongs to a risk class of 10%. What is the cost ofEquity if it employs 6% debt to the extent of 30%, 40% or 50% of the total capital fund of. ₹2.5Croresdebt.

Solution

	30%	40%	50%
Debt()₹	6,00,000	8,00,000	10,00,000
Equity(₹)	4,00,000	12,00,000	10,00,000
EBIT(.₹	5,00,00	5,00,000	5,00,000
Ko10%10%10%			
ValueoftheFirm(V)(₹)	50,00,000	50,00,000	50,00,000
(EBIT/Ko)			

ValueofEquity(E)(.) (V–D)	₹ 44,00,000	42,00,000	40,00,000
Interest @6% ()	₹ 36,000	48,000	60,000
NetProfit(EBIT–Int.)	(₹) 4,64,000	4,52,000	4,40,000
Ke(NP/E)	10.545%	10.76%	11%

T**raditionalApproach:**

It takes a mid-way between the NI approach and the NOI

approachAssumptions

(i) Thevalueofthefirmincreaseswiththeincreaseinfinancialleverage,uptoacertainlimitonly.

(ii) KdisassumedtobelessthanKe.

Modigliani–Miller(MM)Hypothesis

The Modigliani – Miller hypothesis is identical with the Net Operating Income approach.Modigliani and Miller argued that, in the absence of taxes the cost of capital and the value of thefirm are not affected by the changes in capital structure. In other words, capital structure decisionsareirrelevantand valueofthefirm isindependentofdebt– equitymix.

BasicPropositions

M - M Hypothesis can be explained in terms of two propositions of Modigliani and

Miller.Theyare:

i. The overall cost of capital (KO) and the value of the firm are independent of the capitalstructure. The total market value of the firm is given by capitalising the expected netoperatingincomebytherateappropriateforthat riskclass.

ii. The financial risk increases with more debt content in the capital structure. As a resultcost of equity (Ke) increases in a manner to offset exactly the low – cost advantage ofdebt.Hence, overall cost ofcapital remains thesame.

AssumptionsoftheMMApproach

1. Thereisaperfectcapitalmarket.Capitalmarketsareperfectwhen

i) investorsarefreetobuyandsellsecurities,

ii) theycanborrowfundswithoutrestrictionat thesametermsasthefirmsdo,

iii) theybehaverationally,

iv) theyare wellinformed,and

v) therearenotransaction costs.

2. Firmscanbeclassifiedintohomogeneousriskclasses.Allthefirmsinthesameriskclasswillhavethesamedegreeoffinancial risk.

3. Allinvestorshavethe same expectationofafirm'snetoperatingincome (EBIT).

4. Thedividendpayoutratiois100%,whichmeanstherearenoretainedearnings.

LEVERAGE

The concept of leverage has its origin in science. It means influence of one force overanother. Since financial items are inter-related, change in one, causes change in profit. In thecontext of financial management, the term 'leverage' means sensitiveness of one financial variableto change in another. The measure of this sensitiveness is expressed as a ratio and is called degreeofleverage. Algebraically,theleveragemaybedefined as,%Changein onevariable

$$\text{Leverage} = \frac{\%\text{Changeinonevariable}}{\%\text{Changeinsomeothervariable}}$$

CONCEPTANDNATUREOFLEVERAGESOPERATINGRISKANDFINANCIALRISKANDCOMBINEDLEVERAGE:

The concept of leverage has its origin in science. It means influence of one force overanother. Since financial items are inter-related, change in one, causes change in profit. In thecontext of financial management, the term 'leverage' means sensitiveness of one financial variableto change in another. The measure of this sensitiveness is expressed as a ratio and is called degreeofleverage.

Measuresof Leverage

To understand the concept of leverage, it is imperative to understand the three measures ofleverage

(i) OperatingLeverage

(ii) Financial

LeverageIiilCombined

Leverage

In explaining the concept of leverage, the following symbols and relationship shall be used

:Numberofunitsproduced and sold =Q

SalePriceperunit=S

TotalSaleValueorTotalRevenue=SQVar

iableCost perunit =V

TotalVariableCost=VQ

TotalContribution=TotalRevenue –TotalVariableCostNumber

=SQ– VQ

=Q(S–V)

$$\text{Contributionperunit} = \frac{\text{TotalContribution}}{\text{Unitssold}}$$

$$= \frac{Q()S-V}{Q} = \text{S-V=C}$$

EarningbeforeInterestandTax =EBIT

= Total Contribution – Fixed

CostIf,Fixed Cost =F

Then,EBIT=Q(S –V)– F

=CQ−T.(Here,CQdenotescontribution)

OperatingLeverage

It is important to know how the operating leverage is measured, but equally essential is tounderstanditsnaturein financial analysis.

Operating leverage reflects the impact of change in sales on the level of operating profits of thefirm.

ThesignificanceofDOLmaybeinterpretedasfollows:

- Other things remaining constant, higher the DOL, higher will be the change in EBIT for samechange in number of units sold in, if firm A has higher DOL than firm B, profits of firm A willincreaseat fasterratethan thatoffirm Bforsame increasein demand.

This however works both ways and so losses of firm A will increase at faster rate than thatoffirm Bforsamefallin demand. Thismeans highertheDOL, moreistherisk.

- DOLishighwherecontributionishigh.

-ThereisanuniqueDOLforeachlevelofoutput.

Operating Leverageexamines the effect of thechange in the quantity produced ontheEBIT of the Company and is measured by calculating the degree of operating leverage (DOL)Thedegreeofoperatingleverageisthereforeratiobetweenproportionatechangeinebitandcorresp ondingproportionatechangein Q.

$$DOL=\frac{CQ}{CQ-F}=\frac{Contribution}{EBIT}$$

FinancialLeverage

The Financial leverage may be defined as a % increase in EPS associated with a givenpercentage increase in the level of EBIT. Financial leverage emerges as a result of fixed financialchargeagainstthe operating profits of thefirm.The fixed financialchargeappears incase thefunds requirement of the firm is partly financed by the debt financing. By using this relativelycheaper source of finance, in the debt financing, the firm is able to magnify the effect of change inEBITon thelevel ofEPS. ThesignificanceofDFLmaybeinterpreted asfollows:

- Other things remaining constant, higher the DFL, higher will be the change in EPS for samechange in EBIT. In other words, if firm K has higher DFL than firm L, EPS of firm k increases atfasterratethan thatoffirmLforsameincreasein EBIT.However,EPS offirm

Kfallsatafasterratethanthatoffirm Kforsamefallin EBIT.Thismeans,highertheDFLmoreistherisk.

-Highertheinterestburden,higheristheDFL,whichmeansmore afirm borrowsmoreisitsrisk.

- SinceDFLdependsoninterestburden,itindicatesriskinherentinaparticularcapitalmix,andhencethename financialleverage.

ThereisanuniqueDFLforeach amountofEBIT.

While operating leverage measures the change in the EBIT of a company to a particularchange in the output, the financial leverage measures the effect of the change in EBIT on the EPSofthecompany.

Thus the degree of financial leverage (DFL) is ratio between proportionate change in EPSandproportionatechangein EBIT.

$$EPS=\frac{()E()BIT-I \quad I-T-D}{N}$$

WhereI=Interest

t=Taxrate

D = Preference

DividendN=Noof

equityshares.

$$DFL=\frac{' EPS/EPS}{' EBIT/EBIT}$$

SubstitutingthevalueofEPSabove, wehave

$$DFL=\frac{EBIT\ (1-t}{)()E()BIT-I \quad I-t-D}$$

Ifthereisnopreferencesharecapital,

$$DFL=\frac{EBIT}{EBIT-I}=\frac{\text{Earningbeforeinterestandtax}}{\text{Ea rningafterinterest}}$$

EBIT-I=ProfitBeforeTax(PBT)

CombinedLeverage

The operating leverage explains the business risk of the firm whereas the financial leveragedeals with the financial risk of the firm. But a firm has to look into the overall risk or total risk ofthefirm, which isbusinessriskplusthefinancialrisk.

Onecandrawthefollowinggeneral conclusionaboutDCL.

- Otherthingsremainingconstant,highertheDCL,higherwillbethechangeinEPSforsamechangein Q(Demand).

- HighertheDCL,moreistheoverallrisk,andhigherthefixedcostandinterestburdenloweristheearningafte rinterest,and higheristheDCL.

-ThereisanuniqueDCL,foreachlevelof Q.

Acombinationoftheoperatingand financialleveragesisthetotalorcombinationleverage.

The operating leverage causes a magnified effect of the change in sales level on the EBITlevel and if the financial leverage combined simultaneously, then the change in EBIT will, in turn,have a magnified effect on the EPS. A firm will have wide fluctuations in the EPS for even a smallchange in the sales level. Thus effect of change in sales level on the EPS is known as combinedleverage.

Thus Degree of Combined leverage may be calculated as follows

$$:DOL=\frac{Contribution}{EBIT}$$

$$DFL=\frac{EBIT}{EBIT-I}=\frac{\text{Earningbeforeinterestandtax}}{\text{rningafterinterest}}$$

$$DCL=\frac{Contribution}{EBIT}\times\frac{EBIT}{EBIT-I}=\frac{C}{EBIT-I}$$

Example

Calculatethedegreeofoperatingleverage(DOL),degreeoffinancialleverage(DFL)andthe degreeofcombinedleverage (DCL) forthe followingfirmsandinterprettheresults.

	FirmK	FirmL	FirmM
1.Output(Units)	60,000	15,000	1,00,000
2.Fixed costs() ₹	7,000	14,000	1,500
3.Variablecost perunit () ₹	0.20	1.50	0 .02
4.Interestonborrowedfunds() ₹	4,000	8,000	—
5.Sellingpriceperunit () ₹	0.60	5.00	0.10

Solution:

	FirmK	FirmL	FirmM
Output(Units)	60,000	15,000	1,00,000
SellingPriceperunit (₹)	0.60	5.00	0.10
VariableCostperunit	0.20	1.50	0.02
Contributionperunit(₹)	0.40	3.50	0.08
TotalContribution (Unit×Contribution perunit)	₹ 24,000	₹ 52,500	₹ 8,000
Less:FixedCosts	7,000	14,000	1,500
EBIT	17,000	38,500	6,500
Less:Interest	4,000	8,000	—
ProfitbeforeTax(P.B.T.)	13,000	30,500	6,500

DegreeofOperatingLeverage

$$DOL=\frac{Contribution}{EBIT}$$

FirmK	FirmL	FirmM
$\frac{24000}{17000}$	$\frac{52500}{38000}$	$\frac{8000}{6500}$
=1.41	=1.38	=1.23

DegreeofFinancialLeverage

$$DFL=\frac{EBIT}{EBIT-I}$$

$\frac{17000}{13000}$	$\frac{38500}{30500}$	$\frac{6500}{6500}$
=1.31	=1.26	=1.00

DegreeofCombined Leverage

DCL= $\frac{C}{IT-I_{EB}}$ $\frac{24000}{13000}$ $\frac{52500}{30500}$ $\frac{8000}{6500}$

=1.85 =1.72 =1.23

Interpretation:

High operating leverage combined with high financial leverage represents risky situation.Low operating leverage combined with low financial leverage will constitute an ideal situation.Therefore, firm M is less risky because it has low fixed cost and low interest and consequently lowcombinedleverage.

TheselectedfinancialdataforA,BandCcompaniesfortheyearendedMarch,2009areasfollows:

	A	B	C
Variable expensesasa% Sales	66.67	75	50
Interest	200	300	1,000
DegreeofOperatingleverage	₹ 5 : 1	₹6 : 1	₹2 : 1
DegreeofFinancialleverage	3 : 1	4 : 1	2 : 1
Incometax rate	50%	50%	50%

PrepareIncomeStatementsforA,BandCcompanies

Solution:

The information regarding the operating leverage and financial leverage may be interpretedas follows–For Company A, the DFL is 3 : 1 (i.e., EBIT : PBT) and it means that out of EBIT of 3,the PBT is 1 and the remaining 2 is the interest component. Or, in other words, the EBIT : Interestis 3 : 2. Similarly, for the operating leverage of 6 : 1 (i.e., Contribution- EBIT) for Company B, itmeans that out of Contribution of 6, the EBIT is 1 and the balance 5 is fixed costs. In other words,the Fixed costs : EBIT is 5 : 1. This information may be used to draw the statement of sales andprofitforall thethreefirmsasfollows:

StatementofOperatingProfitandSales

Particulars	**A**	**B**	**C**
Financialleverage= (EBIT/PBT)=	3 : 1	4 : 1	2 : 1
or,EBIT/Interest	3 : 2	4 : 3	2 : 1
Interest	₹ 200	₹ 300	₹ 1,000
EBIT	200×3/2 =300	300×4/3 =400	1,000×2/1 =2,000
Operatingleverage=(Cont./EBIT) =	5 : 1	6 : 1	2 : 1
i.e.,FixedExp./EBIT=	4 : 1	5 : 1	1 : 1
VariableExp.toSales	66.67%	75%	50%
ContributiontoSales	33.33%	25%	50%
Fixedcosts	300×4/1 =1,200	400×5/1 =2,000	2,000×1/1 =2,000
Contribution=(Fixedcost+ EBIT)	1,500	2,400	4,000
Sales	4,500	9,600	8,000

IncomeStatementfortheyearended 31.03.09

Particulars	A	B	C
Sales	₹ 4,500	₹ 9,600	₹ 8,000
Variablecost	3,000	7,200	4,000
Contribution	1,500	2,400	4,000
FixedCosts	1,200	2000	2,000
EBIT	300	400	2,000
Interest	200	300	1,000
PBT	100	100	1,000
Taxat50%	50	50	500
ProfitafterTax (PAT)	50	50	500
Operatingleverage(Cont./EBIT) =	5	6	2
Financialleverage(EBIT/PBT)=	3	4	2
Combinedleverage	15	24	4

Example1.

Companyearnsaprofitof. ₹ 3,00,000perannumaftermeeting itsinterestliability ₹ of1,20,000onits12%debentures.Thetaxrateis50%.ThenumberofEquitySharesof ₹ 10 eachare80,000and theretainedearningsamountto ₹ 12,00,000.

TheCompanyproposestotakeupanexpansionschemeforwhichasumof ₹ 4,00,000is required. It is anticipated that after expansion, the Company will be able to achieve the same returnon investment as at present. The funds required for expansion can be raised either through debt attherateof12%orthrough theissueofEquitysharesatpar.

Required:

1. ComputetheEPS ifadditional funds wereraisedbywayof—(a)Debt;

   (b)EquityShares.

2. AdvisetheCompanyastowhichsource of financeispreferable.

Solution

1. ComputationofCapitalEmployed

Particulars	Present	LoanOption	EquityOption
Debt	1,20,000/12% ₹. 10,00,000	₹ 10,00,000 +₹. 4,00,000 = ₹ 14,00,000	(as per present ₹ situation)10,00,000
EquityCapital	80,000shares× ₹ 10 = ₹ . 8,00,000	(aspresent) ₹. 8,00,000	₹. 8,00,000+ ₹4,00,000 = ₹ 12,00,000
RetainedEarning	(given) ₹.12,00,000	(given) ₹.12,00,000	(given) ₹.12,00,000
TotalFund Employed	30,00,000	34,00,000	34,00,000

2. Computation of EPS

Present EBIT = ₹ (3,00,000+1,20,000) = ₹ 4,20,000 for Capital Employed of ₹ 30,00,000. So, Return on Capital Employed = 4,20,00 / . 30,00,000 =14%.

Revised EBIT after introducing additional funds = ₹ . 34,00,000 ×14%= ₹ 4,76,000.

Particulars	Present	Loan Option	Equity Option
EBIT at 14%	4,20,000	4,76,000	4,76,000
Less: Interest on Loans	1,20,000	1,68,000	1,20,000
EBIT	3,00,000	3,08,000	3,56,000
Less: Tax at 50%	1,50,000	1,54,000	1,78,000
EAT	1,50,000	1,54,000	1,78,000
Number of Equity Shares	(given)=80,000	80,000	1,20,000
EPS = EAT ÷ No. of ES	1.875	1.925	1.483

Conclusion: EPS is maximum under Debt Funding Option and dishence preferable.

Leverage Effect : Use of Debt Funds and Financial Leverage will have a favourable effect only if ROCE > Interest rate. ROCE is 14% and Interest Rate is 12%. So, use of debt will have favourable impact on EPS and ROE. This is called at "Trading on Equity" or "Gearing" Effect.

UMIT -IV

DIVIDENDDECISION

The term dividend refers to that part of profits of a company which is distributed by thecompany among its shareholders.Itis the reward of the shareholders for investments made bythem in the shares of the company. The investors are interested in earning the maximum return ontheir investments and to maximize their wealth. A company, on the other hand, needs to providefundstofinanceitslong-termgrowth.Ifacompanypaysoutasdividendmostofwhatitearns,then for business requirements and further expansion it will have to depend upon outside resourcessuch as issue of debt or new shares. Dividend policy of a firm, thus affects both the long-termfinancing and the wealth of shareholders. As a result, the firm's decision to pay dividends must bereached in such a manner so as to equitably apportion the distributed profits and retained earnings.Since dividend is a rightofShareholders to participate in the profits andsurplus of the companyfor their investment in the share capital of the company, they should receive fair amount of theprofits. The company should, therefore, distribute a reasonable amount as dividends (which shouldinclude a normal rate of interest plus a return for the risks assumed) to its members and retain therestforitsgrowth and survival.

DIVIDENDDECISIONANDVALUATIONOFFIRM:

The value of the firm can be maximized if the shareholders wealth is maximized. There areconflictingviewsregardingtheimpactofdividenddecisiononthevaluationofthefirm.According to one school of thought dividend decision does not affect the share-holders' wealth andhence the valuation of the firm. On the other hand, according to the other school of thought,dividenddecisionmateriallyaffectstheshareholders'wealthandalsothevaluationofthefirm.We havediscussed belowtheviewsofthetwo schoolsofthought undertwogroups :

a. TheRelevanceConceptofDividendortheTheoryof Relevance

b. TheIrrelevanceConceptofDividendortheTheoryofIrrelevancemaximized

The Relevance Concept of Dividends: According to this school of thought, dividends arerelevant and the amount of dividend affects the value of the firm. Walter, Gordon and otherspropounded that dividend decisions are relevant in influencing the value of the firm. Walter arguesthat the choices of dividend policies almost and always affect the value of the enterprise. TheIrrelevance Concept of Dividend : The other school of thought propounded by Modigliani andMiller in 1961. According to MM approach, the dividend policy of a firm is irrelevant and it doesnot affect the wealth of the shareholders. They argue that the value of the firm depends on themarketpriceoftheshare;thedividenddecision isofnousein determiningthevalueofthefirm.

WALTER'SMODEL:

Walter's model, one of the earlier theoretical models, clearly indicates that the choice ofappropriate dividend policy always affects the value of the enterprise. Professor James E. Walterhas very scholarly studied the significance of the relationship between the firm's internal rate ofreturn, r, (or actual capitalization rate) and its Cost of Capital, Ke (normal capitalization rate) indeterminingsuch dividend policyaswill maximizethewealthofthestockholders.

Walter'smodelisbasedonthefollowingpremises:

(1) Thefirmfinanceitsentireinvestmentsbymeansofretainedearnings.Newequitystockordebentureisn ot issued toraisefunds.

(2) Internalrateofreturn(r)andcostofcapital(Ke) ofthefirmremainconstant.

(3) Thefirm'searningsareeitherdistributedasdividendsorreinvestedinternally.

(4) Earningsanddividendsofthefirmneverchange.

(5) Thefirmhaslongorinfinitelife.

Theformulaused byWalterto determinethemarket pricepershareis:

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

Where,

P = Market price per

shareD=Dividend

pershare

E=Earningspershare

r = Internal rate of return (Actual capitalization

rate)K=Cost capital(External capitalizationrate)

It may be noted that Walter's formula has thesame effect as the continuing dividendgrowth formula. It seeks to measure the effect of dividends on common stock value by comparingactualand normal capitalization rates.

Another feature of Walter's formula is that it provides an added or reduced Weight to theretainedearningsportionofthecapitalizationearningsformula.Thefactors'r'and'k'areplacedin front of retained earnings to change its weighted value under different situations as discussedbelow:

1. GrowthFirms

In growth firms internal rate of return is greater than the normal rate(r > k). Therefore, r/kfactor will greater than 1. Such firms must reinvest retained earnings since existing alternativeinvestmentsofferalowerreturnthanthefirmisabletosecure.Eachrupeeofretainedearningswil lhave a higher weighting in Walter's formula than acomparable rupee of dividends.Thus,large the firm retains, higher the value of the firm. Optimum dividend payout ratio for such a firmwillbezero.

2. NormalFirm

Normalfirmscomprisethosefirmswhoseinternalrateofreturnisequaltonormalcapitalization (r=k). These firms earn on their investments rate of return equal to market rate ofreturn. For such firms dividend policy will have no effect on the market value per share in theWalter's model. Accordingly, retained earnings will have the same weighted value as dividends. Inthiscasethemarket valuepershareisaffectedbythepayout ratio.

3. DecliningFirms

Firms which earn on their investments less than the minimum rate required are designatedas declining firms. The management of such firms would like to distribute its earnings to thestockholders so that they may either spend it or invest elsewhere to earn higher return than earnedby the declining firms. Under such a situation each rupee of retained earnings will receive lowerweight than dividends and market value of the firm will tend to be maximum when it does notretainearningsat all.

4. EvaluationoftheWalter'sModel

Professor Walter has endeavoured to show in an erudite manner the effects of dividendpolicy on value of equity shares under different situations of a firm. However, the basic premiseson which edifice of the theory are laid down are unrealistic and therefore, conclusions drawn fromthe Walter's model are hardly true for real life situations. Thus, for instance assume that a firmfinancesitsinvestmentopportunitiesonlybymeansofinternalsourcesandnoexternalfinancingisresortedtoforthispurpose.Undersuchasituation,eitherthevalueofthefirm'sinvestmentor dividendorbothwillbesub-optimum.Initsattempttomaximizethevalueofthefirm,the management should go on making investments so long as return of investment is equal to the costof capital. This is the optimum level of investment; the remaining amount should be raised fromexternalsources.Onthecontrary,Walterarguesthatvalueofthefirmismaximizedbyretainingalltheprofitsbecausemagnitudeofinvestmentsfinancedbyretainedearningsmaybelessthantheoptimum level ofinvestment.

Further,ProfessorWalterhasassumedthat'r'remainsconstantunderallthesituations.Asamatterof fact,'r'tendstodecreaseincorrespondencewithincreaseinlevelofinvestments.Thisiswhyitissuggestedthatthemanagementshouldmakeinvestmentsuntooptimallevelwherer=k.

Finally, assumption of constant cost of capital k is incorrect. On the contrary, it varies intunewith changein riskofthefirm.

Example1:Theearningspershareofacompanyis 8andtherateofcapitalisationapplicableis 10%. The company has before it an option of adopting (i)50%,(ii)75% dividend payout ratio.Compute the market price of the company's quoted shares as per Walter's model if it can earn areturnof(i) 15%, (ii) 10%(iii)5%on itsretainedearnings

ComputationofmarketpriceofCompany'sshareby applyingWalter'sformula.

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

Where,

P = Market price per shareD=Dividend pershare

E=Earningspersharei.e., ₹ 8

r= Internalrateofreturn(Actualcapitalizationrate)

K=Costcapital(Externalcapitalization rate)i.e.,10%or0.10

Now,wecancalculatethemarketpricepersharebasedondifferentIRRsanddividendpayoutratio

(i) Marketpricepersharewhen r=15%

(a) When dividend payout ratio is

50%Dividend paid =8 ×50/100₹=4

$$P=\frac{4+\frac{0.15}{0.10}(8-4)}{0.10}=₹\ 100$$

(b) When dividend payout ratio is

75%Dividendpaid=8×75/100 = ₹ 6

$$P=\frac{6+\frac{0.15}{0.10}(8-6)}{0.10}=₹\ 90$$

(ii) Marketpricepersharewhen r =10%

(a) When dividend payout ratio is

50%Dividend paid =8 ×50/100 ₹.4

$$P=\frac{4+\frac{0.10}{0.10}(8-4)}{0.10}=₹\ 80$$

(b) When dividend payout ratio is

75%Dividendpaid=8×75/100 = ₹ 6

$$P=\frac{6+\frac{0.10}{0.10}(8-6)}{0.10}=₹\ 80$$

(iii) Marketpricepersharewhenr=5%

(a) When dividend payout ratio is

50%Dividend paid =8 ×50/100₹=4

$$P=\frac{4+\frac{0.05}{0.10}(8-4)}{0.10}=₹\ 60$$

(b) When dividend payout ratio is

75%Dividendpaid=8×75/100 = ₹ 6

$$P=\frac{6+\frac{0.05}{0.10}(8-6)}{0.10}= ₹ 70$$

GORDON'SMODEL:

Myron Gordon has also developed a model on the lines of Prof. Walter suggesting thatdividends are relevant and the dividend decision of the firm affects its value. His basic valuationmodelisbased on thefollowingassumptions:

1. Thefirmisanallequityfirm.

2. Noexternalfinancingisavailableorused.Retainedearningsrepresenttheonlysourceof financinginvestmentprogrammes.

3. Therateofreturnonthefirm'sinvestmentr,isconstant.

4. Theretentionratio,b,once

decideduponisconstant.Thus,thegrowthrateofthefirmg=br, isalsoconstant.

5. The cost of capital for the firm remains constant and it is greater than the

growthrate,i.e. k >br.

6. Thefirmhasperpetual life.

7. Corporatetaxesdo not exist.

AccordingtoGordon, themarket valueofashare

isequaltothepresentvalueoffuturestreamofdividends. Thus,

$$P=\frac{D}{ke-br}$$

Where,

P=Priceofshares

ke=Cost ofequitycapital

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

firmD=Dividend pershareor(E(1-b))

E = Earnings per

shareb=RetentionRati

o

TheimplicationsofGordon's basicvaluation modelmaybesummarizedasbelow:

1. Whentherateofreturnoffirm'sinvestmentisgreaterthantherequiredrateofreturn,i.e.whenr>k, thepricepershareincreasesasthedividendpayout ratio decreases.

Thus,growthfirmshoulddistribute smallerdividendsandshouldretainmaximum earnings.

2. When the rate of return is equal to the required rate of return, i.e, when r = k, the price per shareremains unchanged and is not affected by dividend policy. Thus, for a normal firm there is nooptimumdividend payout.

3. When the rate of return is less than the required rate of return, i.e., when r<k, the price per shareincreases as the dividend payout ratio increases. Thus, the shareholders of declining firm stand togainifthe firmdistributesitsearnings.Forsuchfirms,theoptimumpayout wouldbe100%.

MODIGLIANI-MILLER'SMODEL(M-M'SMODEL):

Modigliani-Miller's (M-M's) thoughts for irrelevance of dividends are most comprehensive andlogical. According to them, dividend policy does not affect the value of a firm and is therefore, ofno consequence. It is the earning potentiality and investment policy of the firm rather than itspatternofdistribution ofearningsthataffectsvalueofthefirm.

BasicAssumptionsofM-MApproach

(1) There exists perfect capital market where all investors are rational. Information is available toall at no cost; there are no transaction costs and floatation costs. There is no such investor as couldaloneinfluencemarket valueofshares.

(2) There doesnot exist taxes. Alternatively, there is no taxdifferential between income ondividendand capitalgains.

(3) Firm has uncertainty as to future investments and profits of the firm. Thus, investors are able topredictfuturepricesanddividendwithcertainty.ThisassumptionisdroppedbyM-Mlater.

M-M's irrelevance approach is based on arbitrage argument. Arbitrage is the process ofentering into such transactions simultaneously as exactly balance or completely offset each other.The two transactions in the present case are payment of dividends and garnering funds to exploitinvestmentopportunities.Suppose,forexample,afirmdecidestoinvestinaprojectithasalternatives:

(1) Payout dividendsand raiseanequal amountoffundsfrom themarket;

(2) Retain its entire earnings to finance the investment programme. The arbitrageprocess isinvolvedwhereafirm decidestopaydividends and raisefunds from outside.

When a firm pays its earnings as dividends, it will have to approach market for procuringfunds to meet a given investment programme. Acquisition of additional capital will dilute the firmsshare capital which will result in drop in share values. Thus, what the stockholders gain in cashdividends they lose in decreased share values. The market price before and after payment ofdividend would be identical and hence the stockholders would be indifferent between dividend andretentionofearnings.Thissuggeststhatdividenddecisionisirrelevant.M-M'sargumentofirrelevance of dividend remains unchanged whether external funds are obtained by means of sharecapitalorborrowings.Thisisforthefactthatinvestorsareindifferentbetweendebtandequitywithrespectto leverage and cost of debt is the same as the real cost of equity. Finally, even underconditionsofuncertainty,divideddecisionwillbeofnorelevancebecauseofoperationofarbitrage.Marketvalueofshareofthetwofirmswouldbethesameiftheyidenticalwithrespectto business risk, prospective future earnings and investment policies. This is because of rationalbehaviourofinvestorwhowouldprefermorewealthtolesswealth.Differenceinrespectofcurrentand futuredividend policiescannot influencesharevaluesofthetwo firms.

M-M approach contains the following mathematical formulations to prove irrelevance ofdividenddecision.

The market value of a share in the beginning of the year is equal to the present value of dividendspaid at the year end plus the market price of the share at the end of the year, this can be expressedasbelow:

$$P_o = \frac{P1 + D1}{1+K} \quad \text{.....Equation (1)}$$

Where,

P0 = Existing price of a

shareK=Cost ofcapital

D1=Dividendtobereceivedatthe

yearendP1=Marketvalueofashareattheyearend

Ifthereisnoadditionalfinancingfromexternalsources,valueofthefirm(V)willbenumberofshare(n) multiplied bythepriceofeach share(Po). Symbolically:

$$V = nP_o = \frac{n(D1 + P1)}{1+K} \quad \text{……Equation(2)}$$

Ifthefirmissuesmnumberofsharetoraisefundsattheendofyear1soastofinanceinvestmentandat priceP1, valueofthefirm at timeo will be:

$$V = nP_o = \frac{nD1 + (n1 - mP1) - mP}{1+K} \quad \text{……Equation(3)}$$

Thus,thetotalvalueofthefirmasperequation(3)isequaltothecapitalizedvalueofthedividends to be received during the period, plus the value of the number of share outstanding at theendoftheperiod, lessthevalueofthenewlyissued shares.

A firm can finance its investment programme either by ploughing back of its earnings or by issueof new share or by both. Thus, total amount of new share that the firm will issue to finance itsinvestmentwill be:

$mP1 = I_1 - (X_1 - nD_1)$

$= I_1 - X_1 + nD_1$ .....Equation (4)

Where,

mP_1 = Total amount of funds raised by issue of new share to finance

investmentprojects.

I_1 = Total amount of investment during first

periodX_1=Totalamountofnetprofitduringfirstperiod

If equation(4)substitutedintoequation(3),wefindthefollowingequation:

$$nP_o = \frac{(n1 + m1)P - 1L + X}{1+K} \quad \text{……Equation(5)}$$

Oncomparisonofequation(5)withequation(3)wefindthatthereisnodifferencebetween the two valuation equations although equation (5) has expressed the value of firm withoutdividends. This led M-M to conclude that dividend policy has no role to play in influencing sharevalueofafirm.

Example-. Agile Ltd. belongs to a risk class of which the appropriate capitalisation rate is10%. It currently has 1,00,000 shares selling at ₹ 100 each. The firm is contemplating declarationof a dividend of ₹ 6 per share at the end of the current fiscal year which has just begun. AnswerthefollowingquestionsbasedonModiglianiandMillerModelandassumptionofnotaxes:

(i) Whatwillbethepriceofthesharesattheendofthe yearifadiviend isnot declared?

(ii) Whatwillbethepriceifdividend isdeclared?

(iii) Assumingthatthe firm paysdividend,has netincome of ₹ 10 lakh and new investments ₹ of20lakhs duringtheperiod, howmanynewsharesmust beissued?

Solution:

ModiglianiandMiller-DividendIrrelevancyModel

$$P_o=\frac{P1+D1}{1+K}$$

Where,

D1=Contemplateddividendpersharei.e., ₹ 6

P1 = Market price of share at the year end (to be determined)Po=Existingmarketpriceof share i.e., ₹ 100

Ke=Cost ofequitycapital orrateofcapitalisationi.e., 10%or0.10

(i)If dividendisnotdeclared:

$$P_o=\frac{P1+D1}{1+K}$$

$$100=\frac{P1+0}{1+0.10}$$

$$100\times1.10=P1$$

P1 = ₹ 110

(iii) If dividend is declared

:

$$P_o=\frac{P1+D1}{1+K}$$

$$100=\frac{P1+6}{1+0.10}$$

$$100\times1.10=P1+6$$

$$110=P1+6$$

$$P1=110-6$$

P1 = ₹ 104

(ii)CalculationofNo.of Sharestobeissued

Particulars	Dividend declared	Dividendn otdeclared
NetIncome	10,00,000	10,00,000
Less:Dividendspaid	6,00,000	
Retainedearnings	4,00,000	10,00,000
Newinvestments	20,00,000	20,00,000
Amounttoberaisedbyissueofnewshares (A)	16,00,000	10,00,000
Marketpricepershare (B)	₹ 104	₹ 110
Newsharestobeissued(A)/(B) (C)	15,385	9,091

VerificationofM.M.Dividend IrrelevancyTheory

Particulars	Dividend declared	Dividendn otdeclared
Existing sharesNewsharesissued	1,00,000 15,385	,100,000 9,091
Total No. of shares at the end (i)	1,15,385	1,09,091
Marketpricepershare (ii)	₹ 104	₹ 110
Totalmarketvalueofsharesattheyearend (i)×(ii)	₹.120lacs	₹ 120lacs

Therefore,whetherdividendsarepaidornot,valueofthefirmremainsthesameasperM.M.approach.

Criticismof MMApproach

MMhypothesishasbeen criticisedonaccountofvariousunrealisticassumptionsasgivenbelow.

1. Perfectcapitalmarketdoesnotexistinreality.
2. Informationaboutthe companyisnotavailabletoallthepersons.
3. Thefirmshavetoincurflotationcostswhileissuingsecurities.
4. Taxesdoexitandthereisnormallydifferenttaxtreatmentfordividendsandcapitalgain.
5. Thefirmsdonotfollowarigidinvestmentpolicy.
6. Theinvestorshavetopaybrokerage, feesetc.,whiledoinganytransaction.
7. Shareholdersmayprefercurrentincome ascomparedtofurther gains.

Therefore,whetherdividendsarepaidornot,valueofthefirmremainsthesameasper M.M.approach.

RESIDUALMODEL:

If a firm wishes to avoid issue of shares, then it will have to rely on internally generatedfunds to finance new positive NPV projects. Dividends can only be paid out of what is left over.Thisleftoveriscalledaresidualandsuchadividend policyiscalledresidualdividend approach.

Whenwe treatdividendpolicy asstrictly a**financingdecision**, the paymentof cashdividends is a passive residual. The amount of dividend payout will fluctuate from period to periodin keeping with fluctuations in the number of acceptable investment opportunities available to thefirm. If these opportunities abound, the percentage of dividend payout is likely to be zero. On theother hand if the firm is unable to find pofitable investment opportunities, dividend payout will be100%.

Witharesidualdividend policy,thefirm'sobjectiveistomeetits investmentneedsand mostly to maintain its desired debt equity ratio before paying dividends. To illustrate imaginethat a firm has1000 in earnings and a debt equity ratio of 0.5. Thus the firm has 0.5 of debt forevery1.5 ofthetotal value.Thefirmscapital structureis1/3ofdebt and 2/3 ofequity.

The first stpe in implementing a residual dividend policy is to determine the amount offunds that can be generated without selling new equity. If the firm reinvests the entire1000 andpays no dividend, then equity will increase by1000. To keep the debt equity ratio constant, thefirmmust borrow 500.

The second step is to decide whether or not the dividend will be paid. If funds needed areless than the funds generated then a dividend will be paid. The amount of dividend will be theresidual after meeting investment needs. Suppose we require900 for a project. Then 1/3 will becontributedbydebt(i.e. 300)andthebalancebyequity/retainedearnings.Thusthefirmwould borrow 300andfund 600fromtheretainedearnings.Theresiduali.e. 1000– 600= 400wouldbedistributedas dividend.

Moreclaritycanbehadfromthedata givnebelow :

PAT	NewInvest.	Debtportion	Earnings Retained	Additional Equity	Dividends
1000	3000	1000	1000	1000	0
1000	2000	667	1000	333	0
1000	1500	500	1000	0	0
1000	1000	333	667	0	333
1000	500	167	333	0	667
1000	0	0	0	0	1000

Example

ABC Ltd. has a capital of10 lakhs in equity shares of.100 each. The shares currentlyquoted at par. The company proposes declaration of a dividend of.10 per share at the end of thecurrent financial year. The capitalisation rate for the risk class to which the company belongs is12%.

Whatwillbethemarket price oftheshareattheendoftheyear,if

i) Adividendisnot declared?

ii) Adividendisdeclared?

iii) Assumingthatthecompanypaysthedividendandhasnetprofitsof ₹ 5,00,000andmakes newinvestmentsof ₹ 10lakhsduringtheperiod,howmanynewsharesmustbeissued?Usethe M.M.model.

Solution :

Modigliani–MillerApproach

n=no ofshares=10000

P0=marketprice= ₹ 100

D1=Expecteddividend= ₹ 10

Ke=cost ofcapital=12%

i. Market price of share (P1) if dividend not declaredGivenD1 =0

Weknow,

P0=(D1+P1)/(1+Ke)

_ P1 =112

ii. P1 if dividend declaredD1=Rs10

P0=(D1+P1) / (1+Ke)

P1 = ₹ 102

iii. No of shares to be issued

:Δn=(I–E +nD1)/P1

=(1000000– 500000+100000) / 102

=5882shares

TYPESOFDIVIDENDS

Dividendsmaybedeclaredintheformofcash,stock,scripts,bondsandproperty.

1. **CashDividends**

Cashdividendis,byfar,themostimportantformofdividend.Incashdividendsstock holders receive cheques for the amounts due to them. Cash generated by business earnings is usedto pay cash dividends. Sometimes the firm may issue additional stock to use proceeds so derived topaycashdividendsorapproachbankforthepurpose.Generally,stockholdershavestrongpreferenceforcashdividends.

2. StockDividends

Stock dividends rank next to cash dividends in respect of their popularity. In this form ofdividends, the firm issues additional shares of its own stock to the stockholders in proportion to thenumber of shares held in lieu of cash dividends. The payment of stock dividends neither affectscash and earnings position of the firm nor is ownership of stockholders changed. Indeed there willbe transfer of the amount of dividend from surplus account to the capital stock account whichtantamount to capitalization of retained earnings. The net effect of this would be an increase innumber of shares of the current stockholders. But there will be no change in their equity. Withpayment of stock dividends the stockholders have simply more shares of stock to represent thesame interest as it was before issuing stock dividends. Thus, there will be merely an adjustment inthefirm'scapital structureintermsofbothbook valueandmarket price ofthecommonstock.

2. StockSplits

Closely related to a stock dividend is a stock split. From a purely economic point of view astock split is nothing but a gaint stock dividend. A stock split is a change in the number ofoutstanding shares of stock achieved through a proportional reduction of increase in the par valueof the stock. The management employs this device to make a major adjustment in the market priceof the firm's stock and consequently in its earnings and dividends per share. In stock split only thepar value and number of outstanding shares are affected. The amounts in the common stock,premium and retained earnings remain unchanged. This is exhibited in the table. It may be notedfrom the table that although number of shares was doubled, capital account of the firm did notchangebecauseofproportional reduction in parvalueofthestock.

3. ScripDividend

Scripdividendmeanspaymentofdividendinscripofpromissorynotes.Sometimescompany needs cash generated by business earnings to meet business requirements because oftemporary shortage of cash. In such cases the company may issue scrip or notes promising to paydividend at a future date. The scrip usually bears a definite date of maturity or sometimes maturitydate is not stipulated and its payment is left to the discretion of the Board of Directors. Scrips maybeinterest-bearingornon-interestbearing. Suchdividends arerelativelyscarce.

4. BondDividend

As in scrip dividends, dividends are not paid immediately in bond dividends. Instead thecompany promises to pay dividends at a future date and to that effect bonds are issued to stockholdersinplaceofcash.Thepurposeofboththebondandscripdividendsisalike,i.e.,postponement of dividend payments. Difference between the two is in respect of the date ofpayment and their effect is the same. Both result in lessening of surplus and addition to the liabilityof the firm. The only difference between bond and scrip dividends is that the former carries longermaturitythan thelatter.Bond dividends arenot popularinIndia.

(5)**PropertyDividends**

In property dividend the company pays dividends in the form of assets other than cash.Generally,assetswhicharesuperfluousforthecompany aredistributedasdividendstothestockholders. Sometimes the company may use its products to pay dividends. Securities of thesubsidiary companies owned by the company may also take the form of property dividends. Thiskindofdividend payment isnot in vogueinIndia.

FACTORSAFFECTINGDIVIDENDPOLICY:

There is a controversy amongst financial analysts regarding impact of dividends on marketpriceofacompany'sshares.Somearguethatdividendsdonothaveanyimpactonsuchpricewhile others hold a different opinion. However, preponderance of evidence suggests that dividendpolicies do have a significant effect on the value of the firm's equity shares in the stock exchange.Having accepted this premise, it will now be appropriate to consider those factors which affect thedividend policyofafirm.

Thefactorsaffectingthe dividendpolicyarebothexternalaswellasinternal.

Externalfactors

1.Generalstateofeconomy-Thegeneralstateofeconomyaffectstoagreatextentthemanagement's decision to retain or distribute earnings of the firm. In case of uncertain economicand business conditions, the management may like to retain the whole or a part of the firm'searnings to build up reserves to absorb shocks in the future. Similarly in periods of depression, themanagement may also withhold-dividends payment to retain a large part of its earnings to preservethe firm'sliquidity position.Inperiodsof prosperity the managementmay notbeliberalindividend payments though the earning power of a company warrants it because of availability oflarger profitable investment opportunities similarly in periods of inflation, the management maywithhold dividend payments in order to retain larger proportion of the earnings for replacement ofworn-outassets.

2. Legal restrictions - A firm may also be legally restricted from declaring and paying dividends.Forexample,inIndia,thecompaniesAct,1956hasputseveralrestrictionsregardingpaymentsa nddeclaration ofdividends. Someoftheserestrictions areasfollows:

(i) Dividendscanonlybepaidoutof(a)thecurrentprofitsofthecompany,(b)thepastaccumulated profits or (c) money provided by the Central or State Governments for the payment ofdividends in pursuance of the guarantee given by the Government. Payment of dividend out ofcapitalisillegal.

(ii) A company is not entitled to pay dividends unless (a) it has provided for present as well as allarrears of depreciation, (b) a certain percentageof netprofits ofthatyear as prescribed by theentralGovernmentnot exceeding10%,hasbeentransferredto the reservesofthecompany.

(iii) Past accumulated profits can be used for declaration of dividends only as per the rules framedbytheCentral Government in thisbehalf.

Similarly, the Indian Income Tax Act also lays down certain restrictions on payment ofdividends. The managementhas to take into consideration allthe legalrestrictions before takingthedividend decision otherwiseit maybedeclaredasultravires.

Internalfactors

Thefollowingaretheinternalfactorswhichaffectthedividendpolicyofa firm:

1. Desire of the shareholders - Of course, the directors have considerable liberty regarding thedisposal of the firm's earnings, but the shareholders are technically theowners of the companyand, therefore, their desire cannot be overlooked by the directors while deciding about the dividendpolicy.

Shareholdersof afirmexpect twoformsofreturnfromtheirinvestmentinafirm:

(i) Capital gains - The shareholders expect an increase in the market value of the equity shares heldby them over a period of time. Capital gain refers to the profit resulting from the sale of capitalinvestment i.e., the equity shares in case of shareholders. For example, if a shareholder purchases a sharefor40 and lateronsellsit for60 theamount ofcapitalgain isasum of20.

(ii) Dividends - The shareholders also expect a regular return on their investment from the firm. Inmost cases the shareholders' desire to get dividends takes priority over the desire to earn capitalgainsbecauseofthefollowingreasons:

(a) Reduction of uncertainty - Capital gains or a future distribution of earnings involves moreuncertaintythan adistributionofcurrent earnings.

(b) Indication of strength - The declaration and payment of cash dividend carries an informationcontentthat thefirm isreasonablystrongand healthy.

(c) Need for current income - Many shareholders require income from the investment to pay fortheir current living expenses. Such shareholders are generally reluctant to sell their shares to earncapitalgain.

2. Financialneeds ofthecompany - The financialneeds of the company are to beconsidered bythe management while taking the dividend decision. Of course, the financial needs of the companymay be in direct conflict with the desire of the shareholders to receive large dividends. However, aprudentmanagementshouldgive more weightage to the financialneeds of the company ratherthan the desire of the shareholders. In order to maximize the shareholders' wealth, it is advisable toretain earnings in the business only when company has better profitable investmentopportunitiesas compared to the shareholders. However, the directors must retain some earnings, whether or notprofitableinvestmentopportunityexists,tomaintainthecompanyasasoundandsolvententerprise.

3. Desireofcontrol-Dividendpolicyisalsoinfluencedbythedesireofshareholdersorthe managementtoretaincontroloverthecompany.Theissueofadditionalequitysharesforprocuring funds dilutes control to the detriment of the existing equity shareholders who have adominating voice in the company. At the same time, recourse to long-term loans may entailfinancial risks and may prove disastrous to the interests of the shareholders in times of financialdifficulties.

In case of a strong desire for control, the management may be reluctant to pay substantialdividends and prefer a smaller dividend pay out ratio. This is particularly true in case of companieswhich need funds for financing profitable investment opportunities and an outside group is seekingtogain control overthecompany.

However, where the management is strongly in control of the company either because ofsubstantial shareholdings or because of the shares being widely held, the firm can afford to have ahigh dividendpayout ratio.

4. Liquidityposition- The paymentof dividendsresultsincashoutflow fromthe firm. A firmmay haveadequateearningsbutitmaynothavesufficientcashtopaydividends.Itis,therefore, important for the management to take into account the cash position and the overall liquidityposition of the firm before and after payment of dividends while taking the dividend decision. Afirmmaynot,therefore,beinapositiontopaydividendsincashoratahigherratebecauseof insufficientcashresources.Suchaproblemisgenerallyfacedbygrowingfirmswhichneed constantfundsforfinancingtheirexpansion activities.

TYPESOFDIVIDENDPOLICY :

Thevaroustypesofdividendpoliciesarediscussedasfollows:

1. RegularDividendPolicy

Paymentofdividendattheusualrateistermedasregulardividend.Theinvestorssuchasretiredpersons,widows andothereconomicallyweakerpersonsprefertogetregulardividends.

Aregulardividendpolicyoffersthefollowingadvantages.

a. It establishesaprofitablerecordofthecompany.

b. Itcreatesconfidenceamongstthesharehol ders.

c. It aidsinlong-termfinancingandrenders financingeasier.

d. Itstabilizesthemarketvalueofshares.

e. Theordinaryshareholdersviewdividendsasasourceoffundstomeettheirday-todaylivingexpenses.

f. Ifprofitsarenotdistributedregularlyandareretained,theshareholdersmayhavetopayahigher rateoftaxin the yearwhen accumulatedprofitsaredistributed.

However,itmustberememberedthatregulardividendscanbemaintainedonlybycompanies of long standing and stable earnings. A company should establish the regular dividendatalowerrateascompared to theaverage earnings ofthecompany.

2. StableDividendPolicy

The term 'stability of dividends' means consistency or lack of variability in the stream ofdividendpayments.Inmoreprecise terms,itmeanspaymentofcertainminimumamountofdividendregul arly.Astabledividendpolicymaybeestablishedinanyofthefollowingthreeforms.

Constant dividend per share: Some companies follow a policy of paying fixed dividend pershare irrespective of the level of earnings year after year. Such firms, usually, create a 'Reserve forDividend Equalisation' to enable them to pay the fixed dividend even in theyear when theearnings are not sufficient or when there are losses. A policy of constant dividend per share is mostsuitable to concerns whose earnings are expected to remain stable over a number of years. Figuregivenbelowshowsthebehaviourofdividendin such policy.

2.IrregularDividendPolicy

Somecompaniesfollowirregulardividendpaymentsonaccountofthefollowing:

a. Uncertaintyof earnings.

b. Unsuccessfulbusinessoperations.

c. Lackofliquidresources.

d. Fearofadverse effectsofregulardividendsonthefinancialstandingofthecompany.

4. NoDividendPolicy

Acompanymayfollowapolicyofpayingnodividendspresentlybecauseofitsunfavourableworkingcapitalpo sition oronaccount ofrequirementsoffundsforfuture expansion andgrowth.

5. ResidualDividendPolicy

When new equity is raised floatation costs are involved. This makes new equity costlierthan retained earnings. Under the Residual approach, dividends are paid out of profits after makingprovisionformoneyrequiredto meetupcomingcapital expenditurecommitments.

UNIT -V

WORKINGCAPITALMANAGEMENT

The term working capital is commonly used for the capital required for day-to-day workingin a business concern, such as for purchasing raw material, for meeting day-to-day expenditure onsalaries, wages, rents rates, advertising etc.Butthereare much disagreement among variousfinancialauthorities(Financiers,accountants,businessmenandeconomists)astotheexactmeanin goftheterm workingcapital.

DEFINITIONANDCLASSIFICATIONOFWORKINGCAPITAL :

Workingcapitalreferstothecirculatingcapitalrequiredtomeetthedaytodayoperationsofabusinessfirm. Workingcapital maybedefined byvariousauthorsasfollows:

1. AccordingtoWeston&Brigham-
"Workingcapitalreferstoafirm'sinvestmentinshorttermassets,such ascashamountsreceivables,inventoriesetc.

2. Workingcapitalmeanscurrentassets. —Mead,BakerandMalott

3. "Thesumofthecurrentassetsistheworkingcapitalofthebusiness"— J.S.MillWorkingcapitalisdefinedas"the excessofcurrent assetsovercurrent liabilitiesandprovisions".

But as per accounting terminology, it is difference between the inflow and outflowoffunds. In the Annual Survey of Industries (1961), working capital is defined to include "Stocks ofmaterials,fuels,semi-finishedgoodsincludingwork-in-progressandfinishedgoodsandby-products; cash in hand and bank and the algebraic sum of sundry creditors as represented by (a)outstanding factory payments e.g. rent, wages, interest and dividend; b)purchase of goods andservices; c) short-term loans and advances and sundry debtors comprising amounts due to thefactoryonaccountofsaleofgoodsand servicesand advancestowards taxpayments".

The term "working capital" is often referred to "circulating capital" which is frequentlyused to denote those assets which are changed with relative speed from one form to another i.e.,starting fromcash,changing torawmaterials,converting intowork-in-progressandfinishedproducts, sale of finished products and ending with realization of cash from debtors. Workingcapital has been described as the "life blood of any business which is apt because it constitutes acyclicallyflowingstream through thebusiness".

Conceptsof workingcapital

1. GrossWorkingCapital: Itreferstothefirm'sinvestmentintotalcurrentorcirculatingassets.

2. NetWorkingCapital: Theterm"NetWorkingCapital"hasbeendefinedintwodifferentways:

i. It is the excess of current assets over current liabilities. This is, as a matter of fact, the mostcommonly accepted definition. Some people define it as only the difference between current assetsandcurrentliabilities.Theformerseemsto beabetterdefinitionascomparedto thelatter.

ii. Itisthatportionofafirm'scurrentassetswhichisfinancedbylong-termfunds.

3. Permanent Working Capital: This refers to that minimum amount of investment in all currentassets which is required at all times to carry out minimum level of business activities. In otherwords, it represents the current assets required on a continuing basis over the entire year. TandonCommitteehasreferredto thistypeofworkingcapital as"Corecurrent assets".

Thefollowingarethecharacteristicsofthistypeofworkingcapital:

1. Amount of permanent working capital remains in the business in one form or another. This isparticularly important from the point of view of financing. The suppliers of such working capitalshouldnot expect itsreturn duringthelife-timeofthefirm.

2. It also grows with the size of the business. In other words, greater the size of the business,greateristheamountofsuchworkingcapitalandviceversaPermanentworkingcapitalispermanentlyneededforthebusinessandthereforeit shouldbefinanced outoflong-termfunds.

4. Temporary Working Capital: The amount of such working capital keeps on fluctuating fromtime to time on the basis of business activities. In other words, it represents additional currentassets required at different times during the operating year. For example, extra inventory has to bemaintained to support sales during peak sales period. Similarly, receivable also increase and mustbe financed during period of high sales. On the other hand investment in inventories, receivables,etc., will decrease in periods of depression. Suppliers of temporary working capital can expect itsreturn during off season when it is not required by the firm. Hence, temporary working capital isgenerallyfinancedfromshort-term sourcesoffinancesuchasbankcredit.

5. Negative Working Capital: This situation occurs when the current liabilities exceed the currentassets.It isan indication ofcrisisto thefirm.

NeedforWorkingCapital

Working capital is needed till a firm gets cash on sale of finished products. It depends on twofactors:

i. Manufacturingcyclei.e.timerequiredforconvertingthe rawmaterialintofinishedproduct;and

ii. Creditpolicyi.e.creditperiodgiventoCustomersandcreditperiodallowedbycreditors.

Thus, the sum total of these times is called an "Operating cycle" and it consists of thefollowingsixsteps:

- Conversionofcashintorawmaterials.
- Conversionofrawmaterialsintowork-in-process.
- Conversionofwork-in-processintofinishedproducts.
- Timeforsaleoffinishedgoods—cashsalesandcreditsales.
- Timeforrealisationfromdebtorsand Billsreceivablesintocash.
- Creditperiodallowedbycreditorsforcreditpurchaseofrawmaterials,inventoryandcreditorsforwagesand overheads.

DETERMINANTSOFWORKINGCAPITAL:

The factors influencing the working capital decisions of a firm may be classified as twogroups,suchas internalfactors andexternalfactors. Theinternalfactors includes, natureofbusinesssizeofbusiness,firm'sproductpolicy,creditpolicy,dividendpolicy,andaccesstomoney and capital markets, growth and expansion of business etc. The external factors includebusiness fluctuations, changes in the technology, infrastructural facilities, import policy and thetaxationpolicyetc. Thesefactorsarediscussed inbriefin thefollowinglines.

I. InternalFactors

1. Natureandsizeofthe business

The working capital requirements of a firm are basically influenced by the nature and sizeof the business. Size may be measured in terms of the scale of operations. A firm with larger scaleofoperationswillneedmoreworkingcapitalthanasmallfirm.Similarly,thenatureofthebusiness-influencetheworkingcapitaldecisions.Tradingandfinancialfirmshavelessinvestment in fixed assets. But require a large sum of money to be invested in working capital.Retailstores,businessunitsrequirelargeramountofworkingcapital,whereas,publicutilitiesneedlessworkingcapitalandmorefunds to investinfixed assets.

2. Firm'sproductionpolicy

The firm's production policy (manufacturing cycle) is an important factor to decide theworkingcapitalrequirementofafirm.Theproductioncyclestartswiththepurchaseanduseofraw material and completes with the production of finished goods. On the other hand productionpolicy is uniform production policy or seasonal production policy etc., also influences the workingcapitaldecisions.Largerthemanufacturingcycleanduniformproductionpolicy–largerwillbethe requirement of working capital. The working capital requirement will be higher with varyingproductionschedulesin accordancewith thechangingdemand.

3. Firm'screditpolicy

The credit policy of a firm influences credit policy of working capital. A firm followingliberalcreditpolicytoallcustomersrequirefunds.Ontheotherhand,thefirmadoptingstrictcredit policy and grant credit facilities to few potential customers will require less amount ofworkingcapital.

4. Availabilityofcredit

The working capital requirements of a firm are also affected by credit terms granted by itssuppliers–i.e.creditors.Afirmwillneedlessworkingcapitalifliberalcredittermsareavailabletoit.Similarly,theavailabilityofcreditfrombanksalsoinfluencestheworkingcapitalneedsofthe firm. A firm, which can get bank credit easily on favourable conditions, will be operated withlessworkingcapital thanafirm without such afacility.

5.Growthandexpansionofbusiness

Working capital requirement of a business firm tend to increase in correspondence withgrowthinsalesvolumeandfixedassets.Agrowingfirmmayneedfundstoinvestinfixedassetsin order to sustain its growing production and sales. This will, in turn, increase investment incurrent assets to support increased scale of operations. Thus, a growing firm needs additional fundscontinuously.

6.Profitmarginanddividendpolicy

Themagnitudeofworking capitalinafirmisdependentuponitsprofitmarginanddividend policy. A high net profit margin contributes towards the working capital pool. To theextent the net profit has been earned in cash, it becomes a source of working capital. This dependsupon the dividend policy of the firm. Distribution of high proportion of profits in the form of cashdividends results in a drain on cash resources and thus reduces company's working capital to thatextent.Theworkingcapitalpositionofthefirmisstrengthenedifthemanagementfollowsconservative dividend policyand viceversa.

7. Operatingefficiencyofthefirm

Operating efficiency means the optimum utilisation of a firm's resources at minimum cost.If a firm successfully controls operating cost, it will be able to improve net profit margin which,will,in turn, releasegreaterfundsforworkingcapital purposes.

8. Co-ordinatingactivitiesinfirm

The working capital requirements of a firm is depend upon the co-ordination betweenproduction and distribution activities. The greater and effective the co-ordinations, the pressure onthe working capitalwill be minimized.In theabsenceof co-ordination, demand forworkingcapitalisreduced.

II. ExternalFactors

1. Businessfluctuations

Mostfirmsexperiencefluctuationsindemandfortheirproductsandservices.Thesebusiness variations affect the working capital requirements. When there is an upward swing in theeconomy, sales will increase, correspondingly, the firm's investment in inventories and book debtswill also increase. Under boom, additional investment in fixed assets may be made by some firmsto increase their productive capacity. This act ofthe firm will require additional funds. On theother hand when, there is a decline in economy, sales will come down and consequently theconditions, the firm try to reduce their short-term borrowings. Similarly the seasonal fluctuationsmayalsoaffect therequirement ofworkingcapitalofafirm.

2. Changesin thetechnology

The technological changes and developments in the area of production can have immediateeffects on the need for working capital. If the firm wish to install a new machine in the place of oldsystem, the new system can utilise less expensive raw materials, the inventory needs may bereducedtherebyworkingcapital needs.

3. Importpolicy

Import policy of the Government may also effect the levels of working capital of a firmsincetheyhavetoarrangefunds forimportinggoods atspecified times.

4. Infrastructuralfacilities

Thefirmsmayrequireadditionalfundstomaintainthelevelsofinventoryandothercurrent assets, when there is good infrastructural facilities in the company like, transportation andcommunications.

5. Taxation policy

The tax policies of the Government will influence the working capital decisions. If theGovernment follow regressive taxation policy, i.e. imposing heavy tax burdens on business firms,they are left with very little profits for distribution and retention purpose. Consequently the firmhas to borrow additional funds to meet their increased working capital needs. When there is aliberalised tax policy, the pressure on working capital requirement is minimised. Thus the workingcapitalrequirementsofafirm isinfluenced bythe internal and externalfactors.

MEASUREMENTOFWORKINGCAPITAL:

Thereare3methodsforassessingtheworkingcapitalrequirementasexplainedbelow:

a) PercentofSalesMethod

Based on the past experience, some percentage of sales may be taken for determining the quantumofworkingcapital

b) RegressionAnalysisMethod

The relationship between sales and working capital and its various components may be plotted onScatter diagram and the average percentage of past 5 years may be ascertained. This averagepercentage of sales may be taken as working capital. Similar exercise may be carried out at thebeginning of the year for assessing the working capital requirement. This method is suitable forsimpleaswell ascomplexsituations.

c) OperatingCycleMethod:

It is also known as working capital cycle. Operating cycle is the total time gap between thepurchaseofrawmaterialand thereceiptfrom Debtors.

The working capital estimation as per the method of operating cycle, is the most systematicandlogicalapproach.Inthiscase,theworkingcapitalestimationismadeonthebasisofanalysisofeachandeverycomponentoftheworkingcapitalindividually.Asalreadydiscussedtheworking capital,required to sustain the level ofplanned operations, is determined by calculatingalltheindividual componentsofcurrent assetsandcurrent liabilities.

The calculation of net working capital may also be shown as follows

;WorkingCapital=CurrentAssets–CurrentLiabilities

= (Raw Materials Stock + Work-in-progress Stock +
FinishedGoods Stock + Debtors + Cash Balance) –
(Creditors +OutstandingWages+ OutstandingOverheads).

Where,

RawMaterials=Cost(Average)ofMaterialsinStock

Work-in-progress Stock = Cost of Materials + Wages +Overhead of Work-in-progressFinishedGoodsStock= CostofMaterials+Wages+OverheadofFinishedGoods.

CreditorsforMaterial=CostofAverageOutstandingCreditors.Creditorsfor Wages= AveragesWagesOutstanding.

CreditorsforOverhead=AverageOverheadsOutstanding.

Thus,WorkingCapital=CostofMaterialsinStores,inWork-in-progress,inFinishedGoodsandinDebtors.
Less:CreditorsforMaterials
Plus : Wages in Work-in-progress, in Finished Goods and in Debtors.Less:CreditorsforWages.
Plus : Overheads in Work-in-progress, in Finished Goods and in Debtors.Less: CreditorsforOverheads.

Theworksheetforestimationofworkingcapitalrequirementsundertheoperatingcyclemethod maybepresented asfollows:

EstimationofWorkingCapitalRequirements

ICurrentAssets :	Amount	Amount
	AmountMinimumCashBalance	
	****	
Inventories:		
RawMaterials	****	
Work-in-progress	****	
FinishedGoods	****	
	****Receivables:	
Debtors	****	
Bills	****	****
GrossWorkingCapital(CA)	****	****
II CurrentLiabilities:		
CreditorsforPurchases	****	
CreditorsforWages	****	
CreditorsforOverheads	****	****
TotalCurrentLiabilities(CL)	****	
	****ExcessofCAove	
rCL		****
+SafetyMargin		****
NetWorkingCapital		****

Thefollowingpointsare alsoworthnotingwhile estimatingtheworkingcapitalrequirement:

1. **Depreciation**:Animportantpointworthnotingwhileestimatingtheworkingcapitalrequirementisthe depreciationonfixedassets.Thedepreciationonthefixedassets,whichareused in the production process or other activities, is not considered in working capital estimation.The depreciation is a non-cash expense and there is no funds locked up in depreciation as such andtherefore, it is ignored. Depreciation is neither included in valuation of work-in-progress nor infinished goods. The working capital calculated by ignoring depreciation is known as cash basisworking capital. In case, depreciation is included in working capital calculations, such estimate isknownastotal basisWokingcapital.

2. **Safety Margin** : Sometimes, a firm may also like to have a safety margin of working capital inorder to meet any contingency. The safety margin may be expressed as a % of total current assetsor total current liabilities or net workiong capital. The safety margin, if required, is incorporated inthe working capital estimates to find out the net working capital required for the firm. There is nohardandfastruleaboutthequantumofsafetymarginanddependsuponthenatureandcharacteristicsofth

e firm aswell asofitscurrent assetsand current liabilities.

Example.1

Hi-tech Ltd.planstosell 30,000unitsnextyear.Theexpectedcostof goodssoldisasfollows:

	₹ (PerUnit)
Raw	100
materialManufacturinge	30
xpenses	
Selling,administration andfinancial expenses	20
Sellingprice	200

Theduration atvarious stages oftheoperatingcycleisexpectedto beasfollows:

Raw material	2 months
stageWork-in-progress	1
stageFinishedstage	month1/2
Debtorsstage	month1
	month

Assumingthemonthlysaleslevelof2,500units,estimatethegrossworkingcapital requirement.Desiredcashbalanceis5%ofthegrossworkingcapitalrequirement,andworking-progressin 25%completewithrespect to manufacturingexpenses.

Solution:

StatementofWorkingCapitalRequirement

1.**CurrentAssets** :	Amt.(₹	Amt.(₹
StockofRawMaterial(2,500×2×100)W		5,00,000
ork-in-progress:		
RawMaterials(2,500×100)	2,50,000	
ManufacturingExpenses25% of(2,500×30)	18,750	2,68,750
FinishedGoods:		
RawMaterials(2,500×½×100)	1,25,000	
ManufacturingExpenses (2,500×½×30)	37,500	1,62,500
Debtors(2,500×150)		3,75,000
		13,06,250
CashBalance(13,06,250×5/95)		68,750
WorkingCapitalRequirement		13,75,000

Note:Selling,administrationandfinancialexpenseshavenotbeenincludedinvaluationofclosingstock.

Example.2

Calculatetheamountofworkingcapitalrequirementfor SRCCLtd.fromthefollowinginformation:

₹.(PerUnit)

Rawmaterials	160
Directlabour	60
Overheads	120
Totalcost	340
Profit	60
Sellingprice	400

Rawmaterialsareheldinstockonanaverageforonemonth.Materialsareinprocesson anaverageforhalf-a- Finishedgoodsareinstockonanaverageforonemonth.Creditmonthandc month.allowedbysuppliersiso reditallowedtodebtorsistwomonths.Timelagin ne
payment of wages is 1½ weeks. Time lag in payment of overhead expenses is one month. Onefourthofthesalesaremadeon cashbasis.

Cash in hand and at the bank is expected to be50,000; and expected level of productionCash in hand and at the bank is expected to be 50,000; and expected level of productionamountsto 1,04,000 unitsforayearof52weeks.

You may assume that production is carried on evenly throughout the year and a time periodoffourweeks isequivalent toamonth.

Solution:

StatementofWorkingCapitalRequirement

1.CurrentAssets :	Amt.()	Amt.()
CashBalance		50,000
StockofRawMaterials(2,000×160×4)W		12,80,000
ork-in-progress:		
RawMaterials(2,000×160×2)	6,40,000	
LabourandOverheads (2,000×180×2)×50%	3,60,000	10,00,000
FinishedGoods(2,000×340×4)		27,20,000
Debtors(2,000×75%×340×8)		40,80,000
TotalCurrentAssets		91,30,000
2.CurrentLiabilities:		
Creditors(2,000×Rs.160×4)		12,80,000
CreditorsforWages(2,000×Rs.60×1½)		1,80,000
CreditorsforOverheads(2,000×Rs.120×4)		9,60,000
TotalCurrentLiabilities		24,20,000
NetWorkingCapital (CA–CL)		67,10,000

Example.3

JBCLtd.sellsgoodsonagrossprofitof25%.Depreciationisconsideredasapartofcostofproduction. Thefollowingaretheannual figuresgiven toyou :

Sales(2monthscredit)	₹ 18,00,000
Materialsconsumed(1monthscredit)	4,50,000
Wagespaid(1monthlaginpayment)	3,60,000
Cashmanufacturingexpenses (1monthlaginpayment)	4,80,000
Administrativeexpenses(1 monthlagin payment)	1,20,000
Salespromotionexpenses(paidquarterlyinadvance)	60,000

The company keeps one month's stock each of raw materials and finished goods. It alsokeeps₹1,00,000 in cash. You are required to estimate the working capital requirements of thecompanyon cashcost basis,assuming15%safetymargin .

Solution :

StatementofWorkingCapitalRequirement

1.CurrentAssets :	Amt.()₹
Cash-in-hand	1,00,000
Debtors(costofsalesi.e.14,70,000×2/12)	2,45,000
PrepaidSalesPromotionexpenses	15,000
Inventories:	
RawMaterials(4,50,000/12)	37,500
Finishdgoods(12,90,000/12)	1,07,500
Totalcurrentassets	5,05,000
2.CurrentLiabilities :	
Sundrycreditors (4,50,000/12)	37,500
OutstandingManufacturingexp.(4,80,000/12)	40,000
OutstandingAdministrativeexp.(1,20,000/12)	10,000
OutstandingWages(3,60,000/12)	30,000
Totalcurrentliabilities	1,17,500
ExcessofCAand CL	3,87,500
+15%for contingencies	58,125
Workingcapitalrequired	4,45,625

WorkingNotes:

1. Cost	₹
StructureSales	18,00,000

–Grossprofit25%on sales		4,50,000
Costofproduction		13,50,000
–Costofmaterials	₹ 4,50,000	
–Wages	3,60,000	8,10,000
Manufacturingexpenses(Total)		5,40,000
–CashManufacturingexpenses		4,80,000
Therefore,Depreciation		60,000
2.Totalcashcost:		
Costofproduction		13,50,000
–Depreciation		60,000
+Administrativeexpenses		1,20,000
+Salespromotionexpenses		60,000
TotalCashCost		14,70,000

ImportanceorAdvantagesofAdequateWorkingCapital

Working capital is the life blood and nerve centre of a business. Just as circulation of bloodis essentialin the human body for maintaining life, working capitalis very essentialto maintainthe smooth running of a business. No business can run successfully without an adequate amount ofworking capital. The main advantages of maintaining adequate amount of working capital are asfollows:

1. Solvencyofthebusiness:Adequateworkingcapitalhelpsinmaintainingsolvencyofthebusinessbyprovidinguninterrupted flowofproduction.

2. Goodwill:Sufficientworkingcapitalenablesabusinessconcerntomakepromptpaymentsandhencehelps in creatingand maintaininggoodwill.

3. Easyloans:Aconcernhavingadequateworkingcapital,highsolvencyandgoodcreditstandingcanarrangeloans from banksand otheroneasyand favourableterms.

4. Cashdiscounts:Adequateworkingcapitalalsoenablesaconcerntoavailcashdiscountsonthepurchases and henceit reducescosts.

5. Regularsupplyofrawmaterials:Sufficientworkingcapitalensuresmaterials regularsupplyofraw and continuousproduction.

6. Regularpaymentofsalaries,wagesandotherday-to-daycommitments:Acompanywhichhas ampleworkingcapitalcancom makeregularpaymentofsalaries,wagesandotherday-to-mitmentswhichraises daythemoraleofitsemployees,increasestheirefficiency,reduces wastagesandcostsandenhancesproductionandprofits

7. Exploitation of favourable market conditions: Only concerns with adequate working capital canexploit favourable market conditions such as purchasing its requirements in bulk when the pricesarelowerand byholding itsinventoriesforhigherprices.

8. Ability to face crisis: Adequate working capital enables a concern to face business crisis inemergencies such as depression because during such periods, generally, there's much pressure onworkingcapital.

9. Quick and regular return on investments: Every Investor wants a quick and regular return on hisinvestments.Sufficiencyofworkingcapitalenablesaconcerntopayquickandregulardividendsto its investors as there may not be much pressure to plough back profits. This gains the confidenceofitsinvestorsandcreatesafavourablymarket toraiseadditional funds i.e.,thefuture.

10. High morale: Adequacy of working capital creates an environment of security, confidence,highmoraleand createsoverall efficiencyinabusiness.

ExcessorInadequateWorkingCapital

Everybusinessconcernshouldhaveadequateworkingcapitaltorunitsbusinessoperations. It should have neither redundant or excess working capital nor inadequate or shortageof working capital. Both excess as well as short working capital positions are bad for any business.However, out of the two, it is the inadequacy of working capital which is more dangerous from thepointofviewofthefirm.

DisadvantagesofRedundantorExcessiveWorkingCapital

1. ExcessiveWorkingCapitalmeansidealfundswhichearnnoprofitsforthebusinessandhencethebusinesscannot earnaproperrateofreturnonitsinvestments.

2. Whenthereisaredundantworkingcapital,itmayleadtounnecessarypurchasingandaccumulationofinventoriescausingmorechancesoftheft, wasteand losses

3. Excessiveworkingcapitalimpliesexcessivedebtorsanddefectivecreditpolicywhichmaycausehigher incidenceofbad debts.

4. Itmayresultintooverallinefficiencyintheorganization.

5. Whenthereisexcessiveworkingcapital,relationswithbanksandotherfinancialinstitutionsmaynot bemaintained.

6. Due to low rate of return on investments, the value of shares may also

fall.7.The redundant working capital gives rise to speculative

transactions**DisadvantagesorDangersofInadequateWorkingCapital**

1. Aconcernwhichhasinadequateworkingcapitalcannotpayitsshort-termliabilitiesintime.Thus,it willloseitsreputationand shallnot beabletoget goodcredit facilities.

2. Itcannotbuyitsrequirementsinbulkandcannotavailofdiscounts,etc.

3. Itbecomesdifficultforthefirmtoexploitfavourablemarketconditionsandundertakeprofitableprojectsduetolack ofworkingcapital.

4. Thefirmcannotpayday-to-dayexpensesofitsoperationsanditscreatesinefficiencies,increasescostsand reducestheprofitsofthebusiness.

5. Itbecomesimpossibletoutilizeefficientlythefixedassetsduetonon-availabilityofliquidfunds.

6. Therateofreturnoninvestmentsalsofallswiththeshortageof workingcapital.

WORKINGCAPITALFINANCING:

Accruals

Themajoraccrualitemsarewagesandtaxes.Thesearesimplywhatthefirmowestoitsemployeesand to thegovernment.

TradeCredit

Trade credit represents the credit extended by the supplier of goods and services. It isspontaneous source of finance in the sense that it arises in the normal transactions of the firmwithout specific negotiations, provided the firm is considered creditworthy by its supplier. It is animportantsourceoffinancerepresenting25%to50%ofshort-termfinancing.

WorkingCapitalAdvancebyCommercialBanks

Working capital advance by commercial banks represents the most important source forfinancingcurrent assets.

Short-termLoansfromFinancialInstitutions

The Life Insurance Corporation of India and the General Insurance Corporation of Indiaprovideshort-termloanstomanufacturingcompanieswith anexcellent trackrecord.

RightsDebenturesforWorkingCapital

Public limited companies can issue "Rights" debentures to their shareholders with theobjectofaugmentingthelong-termresourcesofthecompanyforworkingcapital requirements.

Thekeyguidelinesapplicabletosuchdebentures areas follows:

i. The amount of the debenture issue should not exceed (a) 20% of the gross currentassets, loans, and advances minus the long-term funds presently available for financingworking capital, or (b) 20% of the paid-up share capital, including preference capitalandfreereserves,whicheveristheloweroftwo.

ii. Thedebt.-equityratio,includingtheproposeddebentureissue, shouldnotexceed 1:1.

iii. The debentures shall first be offered to the existing Indian resident shareholders of thecompanyonaproratabasis.

CommercialPaper

Commercial paper represents short-term unsecured promissory notes issued by firms whichenjoy a fairly high credit rating. Generally, large firms with considerable financial strength are abletoissuecommercialpaper.Theimportantfeaturesofcommercialpaperare asfollows:

i. Thematurityperiod of commercial paperusuallyrangesfrom 90daysto360 days.

ii. Commercial paper is sold at a discount from its face value and redeemed at its facevalue. Hence the implicit interest rate is a function of the size of the discount and theperiodofmaturity.

iii. Commercialpaperisdirectlyplacedwithinvestorswhointendholdingittillitsmaturity.Hence thereisnowelldeveloped secondarymarketforcommercialpaper

Factoring

Factoring, as a fund based financial service, provides resources to finance receivables aswell as facilitates the collection of receivables. It is another method of raising short-term financethrough account receivable credit offered by commercial banks and factors. A commercial bankmay provide finance by discounting the bills or invoices of its customers. Thus,a firm getsimmediatepaymentforsalesmadeoncredit.Afactorisafinancialinstitutionwhichoffersservices relating to management and financing of debts arising out of credit sales. Factoring isbecoming popular all over the world on account of various services offered by the institutionsengagedinit.Factorsrenderservicesvaryingfrombilldiscountingfacilitiesofferedbycommercial banks to a total take over of administration of credit sales including maintenance ofsales ledger, collection of accounts receivables, credit control and protection from bad debts,provision of finance and rendering of advisory services to their clients. Factoring may be on arecourse basis, where the risk of bad debts is borne by the client, or on a non-recourse basis, wheretheriskofcredit isbornebythefactor.

MANAGEMENTOFWORKINGCAPITAL:

Working Capital Management involves management of different components of workingcapital such as cash, inventories, accounts receivable, creditors etc. A brief description followsregarding the various issues involved in the management of each of the above components ofworkingcapital.

INVENTORYMANAGEMENT:

Inventory constitutes an important item in the working capital of many business concerns.Net working capital is the difference between current assets and current liabilities. Inventory is amajor item of current assets. The term inventory refers to the stocks of the product of a firm isoffering for sale and the components that make up the product Inventory is stores of goods andstocks. This includes raw materials, work-in-process and finished goods. Raw materials consist ofthose units or input which are used to manufactured goods that require further processing tobecomefinishedgoods.Finishedgoodsareproductsreadyforsale.Theclassificationofinventoriesandthelevelsofthecomponentsvaryfromorganisaiontoorganisationdependingupon the nature of business. For example steel is a finished product for a steel industry, but rawmaterialforanautomobilemanufacturer.Thus,inventorymaybedefinedas"Stockofgoodsthatis held for future use". Since inventories constitute about 50 to 60 percent of current assets, themanagement of inventories is crucial to successful working capital management. Working capitalrequirements are influenced by inventory holding. Hence, the need for effective and efficientmanagementofinventories.Inventorymanagementreferstoanoptimuminvestmentininventories. It should neither be too low to effectthe production adversely nor too high to blockthe funds unnecessarily. Excess investment in inventories is unprofitable for the business. Bothexcess and inadequate investment in inventories is not desirable. The firmshould operate withinthe two danger points. The purpose of inventory management is to determine and maintain theoptimumlevel ofinventoryinvestment.

TechniquesofInventoryControl

Thefollowingarethevariousmeasuresofselectivecontrolofinventory:

A. Economic Ordering Quantity (EOQ): It is important to note that only the correct quantity ofmaterials is to be purchased. For this purpose, the factors such as maximum level, minimum level,dangerlevel,re-orderinglevel,quantityalreadyonorder,quantityreserved,availabilityoffunds,

quantitydiscount,interestoncapital,averageconsumptionandavailabilityofstorageaccommodation are to be kept in view. There should not be any over stock vis-à-vis no question ofnon-stock. Balance should be made between the cost of carrying and cost of non-carrying i.e. costof stock-out. Cost of carrying includes the cost of storage, insurance, obsolescence, interest oncapital invested. Cost of not carrying includes the costly purchase, loss of production and sales andloss of customer's goodwill. Economic Ordering Quantity (EOQ) is the quantity fixed at the pointwhere the total cost of ordering and the cost of carrying the inventory will be the minimum. If thequantity of purchasesisincreased,the costofordering decreaseswhile the costofcarryingincreases. If the quantity of purchases is decreased, the cost of ordering increases while the cost ofcarrying decreases. But in this case, the total of both the costs should be kept at minimum. Thus,EOQmaybearrivedatbyTabularmethodbypreparingpurchaseorderquantitytablesshowingtheorderingcost, carryingcost and totalcost ofvarious sizesofpurchaseorders.

B. Fixing levels (Quantity Control) - For fixing the various levels such as maximum, minimum,etc., average consumption and lead time i.e. the average time taken between the initiation ofpurchase order and the receipt of materials from suppliers are to be estimated for each item ofmaterials.

a. Maximum Stock Level - The maximum stock level is that quantity above which stocksshould not normally be allowed to exceed. The following factors are taken into consideration whilefixingthemaximum stock level:

1. Averagerateofconsumptionofmaterial.

2. Leadtime.

3. Re-orderlevel.

4. Maximumrequirementofmaterialsforproductionatanytime.

5. Storagespaceavailablecostofstorageandinsurance.

6. Financialconsiderationsuchaspricefluctuations,availabilityofcapital,discountsduetoseasonaland bulk purchases,etc.

7. Keepingqualitiese.g.riskofdeterioration,obsolescence,evaporation,depletionandnaturalwaste,etc.

8. Anyrestrictionsimposed bylocal ornationalauthorityin regardto materials

i.e. purchasing from small scale industries and public sector undertakings, price preference clauses,importpolicy, explosionin caseof explosivematerials,riskoffire,etc.;and

9. Economicorderingquantityisalsoconsidered.Fo

rmula

MaximumLevel=Re-orderlevel—(Minimumconsumption)×(Minimumleadtimes) +Reorderingquantity

b. Minimum Stock Level - The minimum stock level is that quantity below which stocksshould not normally be allowed to fall. If stocks go below this level, there will be danger ofstoppage of production due to shortage of supplies. The following factors are taken into accountwhilefixingtheminimum stock level:

1. Averagerateofconsumptionofmaterial.

2. Averageleadtime.Theshortertheleadtime,theloweristheminimumlevel.

3. Re-orderlevel.

4. Natureoftheitem.

5. Stock out

cost.Formula

MinimumLevel=Re-orderlevel–(Averageusage×Averageleadtime)

c. Re-order Level - This is the point fixed between the maximum and minimum stocklevels and at this time, it is essential to initiate purchase action for fresh supplies of the material. Inorder to cover theabnormalusage of materialorunexpected delay in delivery of fresh supplies,this point will usually be fixed slightly higher than the minimum stock level. The following factorsaretaken into account whilefixingthere-orderlevel:

1. Maximumusageofmaterials

2. Maximumleadtime

3. Maximumstocklevel

4. Minimum stock

levelFormula

Re-orderlevel=MaximumusageXMaximumleadtimeorMinimumlevel+Consumptionduringleadtime.

Re-orderingQuantity(Howmuchtopurchase):ItisalsocalledEconomicOrderingQuantity.

d. Danger level.- This is the level below the minimum stock level. When the stock reachesthis level, immediate action is needed for replenishment of stock. As the normal lead time is notavailable, regular purchase procedure cannot be adopted resulting in higher purchase cost. Hence,this level is useful for taking corrective action only. If this is fixed below the reorder level andabovetheminimum level, it willbepossibleto takepreventive action.

C. ABC Analysis for Inventory Control: ABC analysis is a method of material control accordingto value. The basic principle is that high value items are more closely controlled than the low valueitems. The materials are grouped according to the value and frequency of replenishment during aPeriod.

'A' Class items: Small percentage of the total items but having higher

values.'B'Classitems:Morepercentageofthetotalitemsbuthavingmediumvalues.'

C'Classitems: Highpercentageofthetotalitemsbuthavinglowvalues.

D. V.E.D. Classification: The V.E.D. classification is applicable mainly to the spare parts. Sparesare classified as vital (V), essential (E) and desirable (D). Vital class spares have to be stockedadequately to ensure the operations of the plant but some risk can be taken in the case of 'E'

classspares.Stockingofdesirablesparescanevenbedoneawaywithiftheleadtimefortheirprocurement is low. Similarly, classification may be done in respect of the plant and machinery asvital,essential, important and normal (VEIN).

E. Just in Time (JIT): Normally, inventory costs are high and controlling inventory is complexbecause of uncertainties in supply, dispatching, transportation etc. Lack of coordination betweensuppliersandorderingfirmsiscausingsevereirregularities,ultimatelythefirmends-upininventory problems. Toyota Motors has first time suggested just – in – time approach in 1950s.This means the material will reach the points of production process directly form the suppliers asper the time schedule. It is possible in the case of companies with respective process. Since,
itrequiresclosecoordinationbetweensuppliersandtheorderingfirms,andtherefore,onlyunitswithsystematicapproachwillbeabletoimplement it.

CASHMANAGEMENT

Cash management is one of the key areas of working capital management. Cash is the mostliquid current assets. Cash is the common denominator to which all current assets can be reducedbecause the other major liquid assets, i.e. receivable and inventory get eventually converted intocash. This underlines the importance of cash management. The term "Cash" with reference
tomanagementofcashisusedintwoways.Inanarrowsensecashreferstocoins,currency,cheques, drafts and deposits in banks. The broader view of cash includes near cash assets such asmarketable securities and time deposits in banks. The reason why these near cash assets areincluded in cash is that they can readily be converted into cash. Usually, excess cash is invested inmarketablesecuritiesasit contributestoprofitability.

Cash is one of the most important components of current assets. Every firm should haveadequate cash, neither more nor less. Inadequate cash will lead to production interruptions, whileexcessivecashremainsidleandwillimpairprofitability.Hence,theneedforcashmanagement.

Thus,theaimofcashmanagementistomaintainadequatecashbalancesatonehandandtouseexcess cashin someprofitablewayon theotherhand.

Motives

Motives or desires for holding cash refer to various purposes. The purpose may be differentfrompersontopersonandsituationtosituation.Therearefourimportantmotivestoholdcash.

a. Transactionsmotive-Thismotivereferstotheholdingofcash,tomeetroutinecashrequirements in the ordinary course of business. A firm enters into a number of transactions whichrequires cash payment. For example, purchase of materials, payment of wages, salaries, taxes,interest etc. Similarly, a firm receives cash from cash sales, collections from debtors, return oninvestments etc. But the cash inflows and cash outflows do not perfectly synchronise. Sometimes,cash receipts are more than payments while atother times payments exceed receipts. The firmmust have to maintain sufficient (funds) cash balance if the payments are more than receipts. Thus,the transactions motive refers to the holding of cash to meet expected obligations whose timing isnot perfectly matched with cash receipts. Though, a large portion of cash held for transactionsmotive is in the form of cash, a part of it may be investedin marketable securities whose maturityconformto thetimingofexpected paymentssuchasdividends, taxesetc.

b. Precautionary motive - Apart from the non-synchronisation of expected cash receipts andpayments in the ordinary course of business, a firm may be failed to pay cash for unexpectedcontingencies.Forexample,strikes,suddenincreaseincostofrawmaterialsetc.Cashheldtomeet these unforeseen situations is known as precautionary cash balance and it provides a cautionagainstthem.Theamountofcashbalanceunderprecautionarymotiveisinfluencedbytwofactors i.e.predictabilityofcashflowsandtheavailabilityofshorttermcredit.Themoreunpredictablethecash

flows, thegreater theneed forsuchcash balances and vice versa. Ifthefirm canborrowat

short-notice, it will need a relatively small balance to meet contingencies and vice versa. Usuallyprecautionary cash balances are invested in marketable securities so that they contribute somethingtoprofitability.

c. Speculative motive - Sometimes firms would like to hold cash in order to exploit, the profitableopportunities as and when they arise. This motive is called as speculative motive. For example, ifthe firm expects that the material prices will fall, it can delay the purchases and make purchases infuture when price actually declines. Similarly, with the hope of buying securities when the interestrate is expected to decline, the firm will hold cash. By and large, firms rarely hold cash forspeculativepurposes.

d. Compensation motive - This motive to hold cash balances is to compensate banks and otherfinancial institutes for providing certain services and loans. Banks provide a variety of services tobusiness firms like clearance of cheques, drafts, transfer of funds etc. Banks charge a commissionor fee for their services to the customers as indirect compensation. Customers are required
tomaintainaminimumcashbalanceatthebank.Thisbalancecannotbeusedfortransactionpurposes.
Banks can utilise the balances to earn a return to compensate their cost of services to thecustomers. Such balances are compensating balances. These balances are also required by someloan agreements between a bank and its customers. Banks require a chest to maintain a minimumcash balance in his account to compensate the bank when the supply of credit is restricted andinterestratesarerising.Thuscashisrequiredtofulfiltheabovemotives.Outofthefourmotivesofholdin gcashbalances,transactionmotiveandcompensationmotivesareveryimportant.Businessfirmsusuallyd onotspeculateandneednothavespeculativebalances.Therequirementofprecautionarybalancescan bemet out ofshort-term borrowings.

MANAGEMENTOFRECEIVABLES

Receivables means the book debts or debtors and these arise, if thegoods are sold oncredit. Debtors form about 30% of current assets in India. Debt involves an element of risk and baddebts also. Hence, it calls for careful analysis and proper management. The goal of receivablesmanagement is to maximize the value of the firm by achieving a trade off between risk andprofitability.Forthispurpose, afinancemanagerhas:

1. toobtainoptimum(non-maximum)valueofsales;

2. tocontrolthecostofreceivables,costofcollection,administrativeexpenses,baddebtsandopportunityc ost offundsblocked in thereceivables.

3. tomaintainthedebtorsatminimum accordingto thecreditpolicyofferedtocustomers.

4. tooffercashdiscountssuitablydependingonthecostofreceivables,bankrateofinterestandopportunity cost offundsblocked in thereceivables.

FactorsAffectingtheSizeofReceivables

Thesizeofaccountsreceivableisdeterminedbyanumberoffactors.Someoftheimportantfactorsa reasfollows

1. Level of sales - Generally in the same industry, a firm having a large volume of sales will behaving a larger level of receivables as compared to a firm with a small volume of sales. Sales levelcan also be used for forecasting change in accounts receivable. For example, if a firm predicts thatthere will be an increase of 20% in its credit sales for the next period, it can be expected that therewillalsobea20%increasein thelevel ofreceivables.

2. Credit policies - The term credit policy refers to those decision variables that influence theamount of trade credit, i.e., the investment in receivables. These variables include the quantity oftradeaccountstobeaccepted,thelengthofthecreditperiodtobeextended,thecashdiscounttobe given and any special terms to be offered depending upon particular circumstances of the firmandthecustomer.

3. Termsoftrade-

Thesizeofthereceivablesisalsoaffectedbytermsoftrade(orcreditterms)offeredbythe firm.The twoimportantcomponentsof the credittermsare (i)Creditperiodand (ii)Cashdiscount.

CreditPolicy

Afirmshouldestablishreceivablespoliciesaftercarefullyconsideringbothbenefitsandcostsofdifferen t policies.Thesepoliciesrelateto:

(i) CreditStandards,(ii)CreditTerms,and(iii)CollectionProcedures.

i. Creditstandards-

The term credit standards represent the basic criteria for extension of credit to customers. Thelevels of sales and receivables are likely to be high if the credit standards are relatively loose, ascompared to a situation when they are relatively tight. The firm's credit standards are generallydeterminedbythefive"C's".Character,Capacity, Capital,Collateral and Conditionsofcustomer.

ii. Creditterms

It refers to the terms under which a firm sells goods on credit to its customers. As stated earlier, thetwocomponentsofthecredit termsare (a) Credit Periodand (b) CashDiscount.

(a) Credit period - Extending the credit period stimulates sales but increases the cost on account ofmoretyingup offunds in receivables.

(b) Cash discount - The effect of allowing cash discount can also be analysed on the same patternas that of the credit period. Attractive cash discount terms reduce the average collection periodresultingin reduced investment in accountsreceivable.

iii. Collectionprocedures

A stringent collection procedure is expensive for the firm because of high out-of-pocketcosts and loss of goodwill of the firm among its customers. However, it minimises the loss onaccount of bad debts as well as increases savings in terms of lower capital costs on account ofreduction in the size of receivables. A balance has therefore to be stuck between the costs andbenefitsofdifferentcollection proceduresorpolicies.

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