**FINANCIAL MANAGEMENT**

**UNIT-3**

**BBA-2nd YEAR**

**Management of Fixed Capital**

The expression ‘fixed capital’ often considered to be analogous to ‘fixed assets’ denotes the employment of capital in permanent assets and other non-current assets. The fixed assets are assets of a permanent nature that the business does not intend to dispose of, or that could not be disposed of without interfering with the operation of the business.

The investment in the fixed assets is the first initial step in establishing a corporation. The investment in non-current assets is also called fixed capital. Such assets include items in which capital is locked up for a long period.

Although they do not indicate the investment in physical productive facilities, yet they are necessary for the conduct of the business and considered essential part of the capital arrangement.

They include long-term receivables, advances to subsidiary or affiliate companies, goodwill, patents, copyrights, long term investment in other companies and pre-paid expenses.

Thus the fixed assets are held by a company with the object of earning revenue directly or indirectly and not for the purpose of sale in the ordinary course of business. The fixed assets include land, buildings, plant, machinery and other fixed equipment, furniture and fixtures, vehicles, livestock etc.

### ****Some definitions of fixed capital:****

“Fixed capital is the funds required for the acquisition of those assets that are to be used over for a long period- such assets as land, buildings, machinery, equipment and tools.” **-Shubin**

“Fixed Capital comprises of fixed assets and other non-current assets” –**F.N. Chiumiriatoo**

“Fixed capital is invested in the fixed or long-run assets. The amount of fixed capital need, therefore, varies directly with the amount of fixed assets owned or used by a business.” **-Wheeler**

“Fixed capital is comparatively easily defined to include land, buildings, machinery and other assets having a relatively permanent existence.” **-Hoagland**

From the analysis of the above definitions, it is clear that fixed capital consists of investment in permanent assets which are necessary for conducting the operations and expansion of a business unit. Thus, fixed capital is used for meeting the permanent requirements of a business enterprise. It is the capital which is invested in fixed assets and non-current assets to generate profits for a company.

### ****Importance of Fixed Capital:****

* Fixed capital plays a vital role in the establishment of business enterprises. It is required for acquiring fixed (tangible and intangible) assets, which is the preliminary requirement for starting a company. There are certain enterprises (manufacturing and public utilities) which cannot think of running in the absence of adequate amount of fixed capital.
* Fixed capital is not only required for financing the acquisition of fixed assets, but also for initial period of its working in order to establish itself. It is also needed for making improvements and expanding the existing set up of a business enterprise. Thus, it appears that adequate amount of fixed capital is an essential pre-requisite for the success of an industrial concern.
* Right from the very beginning, when the idea to set up an industrial unit generates in the mind of the entrepreneur, the initial investment is made in fixed assets, only then, enterprise will be in a position to work smoothly.

The amount of fixed capital required varies from business to business because of the **following factors**:

**(1) Methods of handling production:**

If a company is manufacturing all parts of a product, its fixed capital needs will be more, in comparison to an enterprise which is assembling parts produced by other concerns. For example, a bicycle factory which manufactures its own parts and then assembles them into a bicycle, needs huge amount of fixed capital. On the other hand, if a company assembles the parts manufactured by other firms, it will require small amount of fixed capital. Thus, the method of handling production also affects the magnitude of fixed capital.

**(2) Mode of acquiring fixed assets:**

Fixed assets can be either purchased or acquired on lease basis or taken on rent. In the first case, the requirement of fixed capital will be very high.

**(3) Diversity of manufacturing lines:**

If a company manufactures and markets its goods itself, it needs more fixed capital than a company engaged only in manufacturing a product. A trading concern buying and selling the goods produced by others will need very little fixed capital. Thus diversity of production lines also determines the fixed capital requirements.

#### ****(4) Nature of industry business:****

The business enterprises engaged in rendering personal services, merchandise, commerce and trade may need very little fixed investment, while industries manufacturing heavy and capital goods are likely to invest a major part of their funds in fixed assets.

Similarly, a public utility undertaking (say, an electricity supply company, water supply undertaking or a railway company) would need heavy investment in fixed assets and equipment. Thus the nature of business determines the amount of fixed capital to a large extent.

#### (5) Kinds of products:

If the company is engaged in the manufacture of complicated goods like refrigerators, T.V. sets, motor vehicles, engines etc., it may need large amount of fixed capital than a business enterprise which produces simple consumer items like powder, cream, toothpaste etc. Thus the type of product manufactured also governs the amount of fixed capital.

#### ****(6) Size of the business unit:****

A large scale firm requires more fixed capital than a small enterprise. The bigger the size of plant, the larger would be the amount of fixed investment. For instance, capital-intensive companies require huge amount to be invested in fixed assets as compared to labour-intensive companies.

**Cost of Capital: Meaning and Classification**

**Cost of capital** refers to the weighted average cost of various capital components, i.e. sources of finance, employed by the firm such as equity, preference or debt. In finer terms, it is the rate of return that must be received by the firm on its investment projects, to attract investors for investing capital in the firm and to maintain its market value.

**The factors which determine the cost of capital are:-**

* Source of finance
* Corresponding payment for using finance.

On raising funds from the market, from various sources, the firm has to pay some additional amount, apart from the principal itself. The additional amount is nothing but the cost of using the capital, i.e. cost of capital which is either paid in lump sum or at periodic intervals.

**Classification of Cost of Capital**

1. **Explicit cost of capital:** It is the cost of capital in which firm’s cash outflow is oriented towards utilization of capital which is evident, such as payment of dividend to the shareholders, interest to the debenture holders, etc.
2. **Implicit cost of capital:** It does not involve any cash outflow, but it denotes the opportunity foregone while opting for another alternative opportunity.

To cover the cost of raising funds from the market, cost of capital must be obtained. It helps in assessing firm’s new projects because it is the minimum return expected by the shareholders, lenders and debtholders for supplying capital to the business, as a consideration for their share in the total capital. Hence, it establishes a benchmark, which must be met out by the project.

However, if a firm is incapable of reaping the expected rate of return, the value of shares in the market will tend to decline, which will lead to the reduction in the wealth of the shareholders as a whole.

**Importance of Cost of Capital**

* It helps in evaluating the investment options, by converting the future cash flows of the investment avenues into present value by discounting it.
* It is helpful in capital budgeting decisions regarding the sources of finance used by the company.
* It is vital in designing the optimal capital structure of the firm, wherein the firm’s value is maximum, and the cost of capital is minimum.
* It can also be used to appraise the performance of specific projects by comparing the performance against the cost of capital.
* It is useful in framing optimum credit policy, i.e. at the time of deciding credit period to be allowed to the customers or debtors, it should be compared with the cost of allowing credit period.

Cost of capital is also termed as cut-off rate, the minimum rate of return, or hurdle rate.

**Cost of Capital and Equity Financing**

The cost of equity is more complicated, since the rate of return demanded by equity investors is not as clearly defined as it is by lenders. Theoretically, the cost of equity is approximated by the capital asset pricing model

**(CAPM) = risk-free rate + (company’s beta x risk premium)**

The firm’s overall cost of capital is based on the weighted average of these costs. For example, consider an enterprise with a capital structure consisting of 70% equity and 30% debt; its cost of equity is 10% and after-tax cost of debt is 7%. Therefore, its WACC would be (0.7 x 10%) + (0.3 x 7%) = 9.1%. This is the cost of capital that would be used to discount future cash flows from potential projects and other opportunities to estimate their net present value (NPV) and ability to generate value.

Companies strive to attain the optimal financing mix based on the cost of capital for various funding sources. Debt financing has the advantage of being more tax efficient than equity financing, since interest expenses are tax deductible and dividends on common shares are paid with after-tax dollars. However, too much debt can result in dangerously high leverage, resulting in higher interest rates sought by lenders to offset the higher default risk.

**Cost of Capital Examples**

Every industry has its own prevailing cost of capital. For some companies, the cost of capital is lower than their discount rate. Some finance departments may lower their discount rate to attract capital or raise it incrementally to build in a cushion depending on how much risk they are comfortable with.

As of January 2018, diversified chemical companies have the highest cost of capital at 10.78%. The lowest cost of capital can be claimed by non-bank and insurance financial services companies at 2.99%. Cost of capital is also high among biotech and pharmaceutical drug companies, steel manufacturers, food wholesalers, internet (software) companies, and integrated oil and gas companies. Those industries tend to require significant capital investment in research, development, equipment and factories. Among the industries with lower capital costs are money center banks, hospitals and healthcare facilities, power companies, real estate investment trusts (REITs), reinsurers, retail grocery and food companies, and utilities (both general and water). Such companies may require less equipment or benefit from very steady cash flows.

# Net Present Value (NPV)

**Net present value (NPV)** is a discounted technique, which considers the time value of money. NPV consider different period cash flow value differ in their values. So, estimated cash flow must be converted into present value. It can be defined as the difference between total present value and net cash outlay. It is determined as following.

**Net present value (NPV) = Total present value – Net cash outlay**

**Calculation Of Net Present Value (NPV)**  
**Illustration**,  
Suppose,  
The net investment = $ 50,000  
Cash flow per year = $ 16,000  
Period(No. of years)= 5 years  
minimum required rate of return = 10%  
Required:Net present value (NPV)

**Solution,**  
Net present value (NPV) = Total present value – Net investment  
= (16000 x 3.972) – 50000 = $ 10,656

**Decision Rules Of Net Present Value**

**A. If projects are independent**  
Accept the project with positive NPV.  
Reject the project with negative NPV.

**B. If projects are mutually exclusive**  
Accept the project with high NPV.  
Reject other projects.

### ****Advantages****

1. NPV gives important to the time value of money.

2.In the calculation of NPV, both after cash flow and before cash flow over the life span of the project are considered.

3. Profitability and risk of the projects are given high priority.

4. NPV helps in maximizing the firm’s value.

### ****Disadvantages****

1. NPV is difficult to use.

2. NPV can not give accurate decision if the amount of investment of mutually exclusive projects are not equal.

3. It is difficult to calculate the appropriate discount rate.

4. NPV may not give correct decision when the projects are of unequal life.

# Internal Rate of Return (IRR)

The IRR is used when the cost of the investment and the annual cash flows are known and the unknown rate of earnings to be determined. The IRR is described as that rate which equates the present value of the future cash flows with the cost of the investment which produce them. IRR method is also called yield on investments, marginal efficiency of capital, time adjusted rate of return, rate of return and so on.

The IRR is the discounted rate that equals the aggregate present value of CFAT (cash flow after tax) with the aggregate present value of cash outflows required for a new investment. The project will be accepted only if IRR is higher than cost of capital.

### Advantages Of IRR

1. IRR method considers the time value of money.
2. IRR method discloses the maximum rate of return the project can give.
3. IRR method considers and analysis all cash flows of entire project.
4. IRR method ascertains the exact rate of return the project earns.

### Disadvantages Of IRR

1. IRR method is difficult to understand, complications due to trial and error method.
2. The important drawback of IRR is that it recognizes the cash inflows generated by project is reinvested to internal rate of project, but NPV recognizes such cash inflows are reinvested to cost of capital of the organization.
3. Single discount rate ignores the varying future interpret rate.

### Calculation Of IRR

**For even case**

First, find out factor

Factor = Net Cash Outlay(NCO)/Cash flow after tax(CFAT)

Factor is also known as payback period.

After finding out the factor, locate the factor in the line of annuity table at given year from row side, if the factor lies exactly in any percentage then that percentage is known as IRR.If the factor does not lie exactly then take two percentage corresponding one higher and another lower and interpolate it.

By interpolation,

IRR= LR + (Factor at LR- Required rate)/(Factor at LR- Factor at HR) x (HR-LR)

where, LR = lower rate and HR = higher rate.

**For uneven case**

First find out factor

Factor = NCO/Average CFAT

where, average CFAT= Total sum of CFAT/Total life of the project

After finding the factor, locate the factor in the line of annuity table at given year from row side, if the factor lies exactly in any percentage then that percentage is known as IRR. If the factor does not lie exactly then take two percentages corresponding one higher and another lower and interpolate it.

By interpolation,

IRR= LR +(TPV at LR – NCO)/(TPV at LR- TPV at HR)x (HR-LR)

Note: For even case one TPV must be higher than NCO whereas another should be lower than NCO.

#### Decision Rules Of IRR

**If projects are independent**

\* Accept the project which has higher IRR than cost of capital(IRR> k).

\* Reject the project which has lower IRR than cost of capital(IRR

**If projects are mutually exclusive**

\* Accept the project which has higher IRR

\* Reject other projects

For the acceptance of the project, IRR must be greater than cost of capital. Higher IRR is accepted among different alternatives.

# Account Rate of Return (ARR)

Accounting rate of return (ARR) is also known as average rate of return. ARR is based upon accounting information rather than on cash flow. In other words, Accounting rate of return (ARR) refers to the rate of earning or rate of net profit after tax on investment.  
ARR consider profitability rather than liquidity. Under ARR technique, the average annual expected book income is divided by the average book investment in the project.

**ARR = (Average net income/Average investment) x 100**  
**Where,**  
**Average net income= Total net income/No. of years**  
**Average investment= Net investment/2**

**Calculation Of Accounting Rate Of Return (ARR)**  
Illustration:  
The initial investment of the project is $30,000. The net profit after tax is as follows:  
Year……………………….Net profit after tax($)  
1………………………………25000  
2………………………………30000  
3……………………………….20000  
4………………………………..25000  
5………………………………..40000

Required: Accounting rate of return.

**Solution**  
Calculation of ARR:  
ARR = (Average net income/Average investment) x 100  
= (28000/15000) x 100 = 18.67%.  
Where,  
Average net income = Total net income/No, of years  
= 25000+30000+20000+25000+40000/5 = 28000  
Average Investment = Net investment/2 = 30000/2 = 15000

**Decision Rules Of Accounting Rate Of Return (ARR)**

**A. If projects are independent**  
Accept the project which has higher ARR than standard.  
Reject the project which has lower ARR than standard.  
**B. If projects are mutually exclusive**  
Accept the project which has highest ARR  
Reject other projects.

**Advantages Of Accounting Rate Of Return (ARR)**

1. ARR is based on accounting information, therefore, other special reports are not required for determining ARR.

2. ARR method is easy to calculate and simple to understand.

3.ARR method is based on accounting profit hence measures the profitability of investment.

**Disadvantages Of Accounting Rate OF Return (ARR)**

1. ARR ignores the time value of money.

2. ARR method ignores the cash flow from investment

3. ARR method does not consider terminal value of the project.

# Analysis of Risk & Uncertainty

It was assumed that those investment proposals did not involve any kind of risk, i.e., whatever the proposal is undertaken, there would not be any change in the business risk which are apprehended by the suppliers of capital. Practically, in real world situation, this seldom happens.

We know that decisions are taken on the basis of forecast which again depends on future events whose happenings cannot be anticipated/predicted with absolute cer­tainly due to some factors, e.g., economic, social, political etc. That is why question of risk and uncertainty appear before the business world although it varies from one investment proposal to another.

For example, some proposal may not even involve any risk, e.g., investment in Government bonds and securities where there is a fixed rate of return exists, some may be less risky, e.g., expansion of the existing business, others may be more risky, e.g., setting up a new operation.

Therefore, while evaluating investment proposals care should be taken about the effect that their acceptance may have on the firm’s business risk as apprehended by the creditors and/or investors. As such, the firm should always prefer a less risky investment proposal than a more risky one.

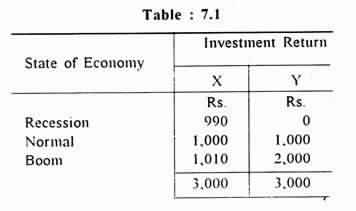
The riskiness of an investment proposal may be defined as the variability of its possible terms, i.e., the variability which may likely be occurred in the future returns from the project. For example, if a person invests Rs 25,000 to short-term Govern­ment securities, carrying 12% interest, he may accurately estimate his future return year after year since it is absolutely risk-free.

On the contrary, instead of investing Rs 25,000 m short-term Government security, if he wants to purchase the shares of a company, then it is not at all possible for him to estimate the future returns accurately, since the dividend rates of a company may widely vary, viz., from 0% to a very high figure.

Therefore, as there is a high degree of variability relating to future returns, it is relatively risky as compared to his investment in Government securities. Thus, the risk may be defined as the variability which may likely to accrue in future between the estimated/expected returns and actual returns. The greater is the variability between the two, the risker the project and vice-versa.

In short, risk may be defined as the degree of uncertainty about an income. Risk is a character of the investment opportunity and has nothing to do with the attitude of investors Consider the following two investment opportunities, viz., X and Y which have the possible payoffs presented in Table 7.1 below depending on the state of economy.

(Assume that the three state of economy are equally likely)



From the table 7.1 presented above, it becomes clear that the average expected return from both the projects are Rs. 1,000 (Rs 3,000 3). But the return from investment-X will lie between Rs. 990 and R 1,010 as compared to investment-Y which lies between Rs. 0 and Rs. 2,000, i.e., in other words, more uncertainty arises about the return from the investment Y.

However, decision situations may be broken down into three types: Certainty, Risk and Uncertainty.

**(i) Certainly:**

No Risk

**(ii) Risk:**

It involves situations in which the probabilities of a particular event which occurs are known, i.e., chance of future loss can be foreseen.

**(iii) Uncertainty:**

The probabilities of a particular event which occurs are not known i.e., the future loss cannot be foreseen. The basic difference between risk and uncertainty is that variability is less in case of risk whereas it is more in case of uncertainty although both the terms are used here interchangeably.