Finance

Financial Services

Financial Management

Finance is the art and science of managing money. Theoretically, it has two parts — financial services and financial management. Financial services is concerned with the design and delivery of advice and financial products to individuals, business and governments within the areas of banking and related institutions, personal financial planning, investments, real estate, insurance and so on. Financial management is the area of business management devoted to a judicious use of capital and careful selection of sources of capital in order to enable a business firm to move in the direction of reaching its goal.

Financial management was initially governed by traditional approach which concentrated with the mode and means of procuring funds in 1950s. In 1950s it entered into a modern era where the mechanism of managing funds were emphasized.

Modern approach of financial management tries to answer the following 3 questions —

1. In what form should a firm hold its assets?
2. What should be the composition of the liabilities of the business firm?

3. What should be the size of a business enterprise and what should be its pace of growth?

Objectives of Financial Management

- To provide a framework for optimum financial decision-making in order to maximize shareholders' wealth.
- Policy formulation to earn certain goals.

Q. What should be the goal of a firm?
or,
Make an analytical discussion between wealth maximization and profit maximization.

Ans. Firms producing good and services may function in a market economy or in a controlled economy should survive in order to fulfill certain goals. The most prominent goal is profit-maximization but it has been proved that money is not the sole motivator. The firm should survive with the society and mingle the society's goal with his personal goal. At present, alternative goals like maximization of earnings per share, maximization of return on equity and maximisation of shareholders' wealth has emerged. To be more precise, the question is — What would a person to maximise its contribution to the societies?

The financial managers and ~~acame~~ academicians have settled this question by the following answer that contribution to the society is maximized by maximizing the value of the firm. Value of the firm will be maximum when shareholders' wealth of that firm is maximum. It means maximizing the net present value of a course of an action to the shareholders. Net present value of the course of an action is the difference between the present value of the benefits and the present value of the cost incurred.

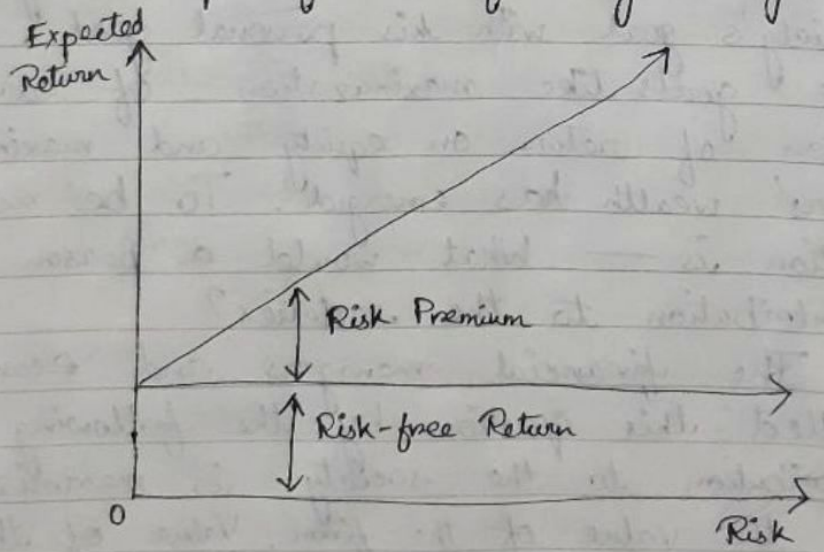
net
A financial action that has a positive value creates ~~wealth~~ wealth for shareholders and therefore is desirable.

Other goals have certain limitations — Maximization of profit is not as inclusive in comparison to maximization of shareholders' wealth because profit in absolute terms is not a proper guide for decision-making. If profits are uncertain and described by a probability distribution, the meaning of profit maximization is not clear.

In view of the shortcomings of the alternatives, maximization of the wealth of equity shareholders appears to be the most appropriate goal for financial decision-making.

Risk Return Trade-off

Financial decisions incur different degree of risk. Risk and expected return move side by side, greater the risk the greater will be the ~~extended~~ expected return. The risk return relationship can be shown with the help of the following diagram —



Financial decisions of the firm are guided by the risk return trade-off. These decisions are interrelated and jointly affect the market value of its shares by influencing return and risk of the firm.

The relationship between return and risk can be simply expressed as —

Expected Return = Risk-free rate + Risk premium.

Risk free rate is the compensation for time and risk premium is the compensation for risk. Higher the risk, higher will be the risk premium. A proper balance between return and risk should be maintained to maximise the market value of the firm's shares. Such balance is called risk return trade-off.

4 Pillars of Financial Management:

Financial management depends on 4 major decision-makings and their implementation. These are —

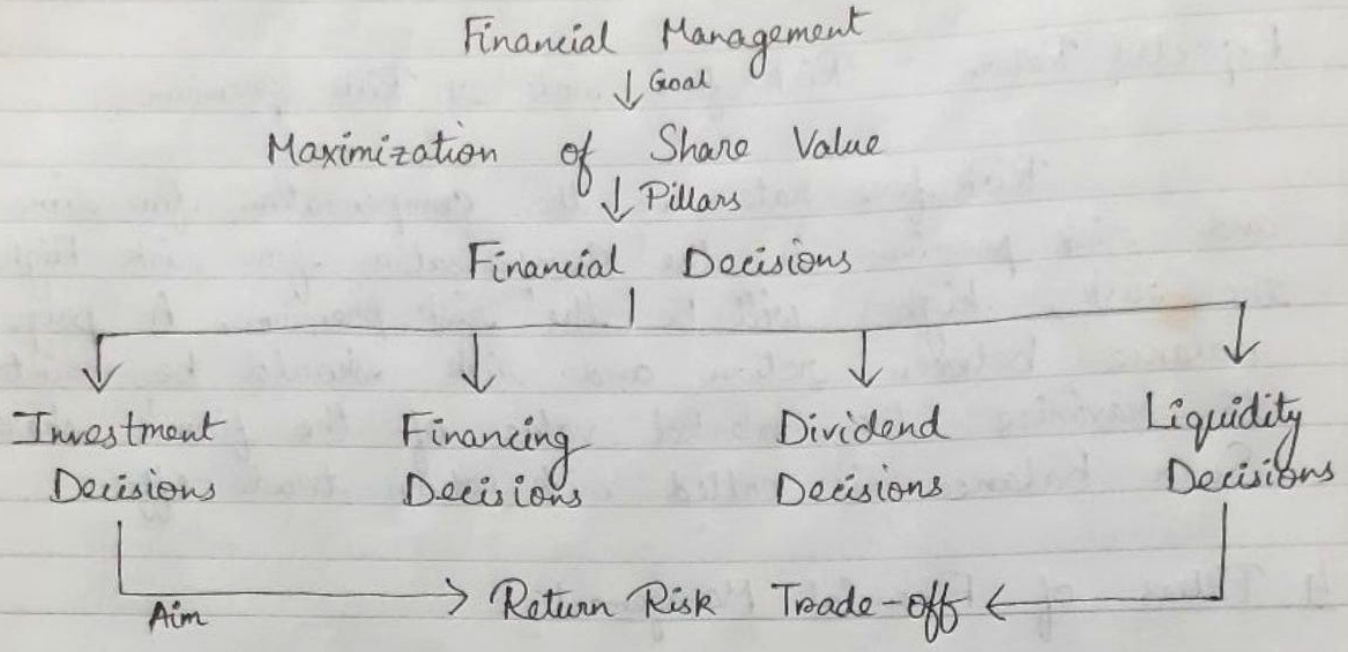
a) Financing decisions
   i) When, where from and how to acquire funds to meet the firm's investment needs.
   ii) To determine appropriate proportion of equity and debt.

b) Investment decisions — It involves the decision of allocation of capital to long-term assets that would yield benefits in the future. As investment decisions involve capital expenditure, it is referred to as capital expenditure decisions.

c) Dividend decisions — The financial manager must decide whether the firm should distribute all profits or distribute a portion and retain the balance. For this an optimum dividend policy have to be determined.

d) Liquidity decisions — Investments in current assets affects the firm's profitability and liquidity. Investments in current assets can lead to the firm's insolvency.

Skeleton structure of Financial Management



Time Value of Money

It is an individual's preference for possession of a given amount of money now rather than the same amount at some future time. Most individuals value the opportunity to receive money now than to wait for 1 or more periods to receive the same amount. The time value of money is generally expressed by an interest rate. This rate will be positive even in the absence of any risk. That is why it may be called risk-free rate. In reality an investor will be exposed to some degree of risk. Therefore, he would require a rate of return called risk-return from the investment which compensates him for both time and risk. Thus the required rate of return will be risk free rate + risk premium. The risk free rate compensates for time while risk premium compensates for risk. The interest rates accounts for time value of money irrespective of individual preferences and attitude.

Calculation and Mathematical Models of Time Value of Money

There are two common methods for adjusting cash flow for the time value of money —

(i) Compounding — The process of calculating future value of cash flows.

(ii) Discounting — The process of calculating present value of cash flows.

Compounding is the process of finding future value of cash flows by applying the concept of compound interest.

The mode of calculation is shown that — Suppose an investor has determined to invest at 10% interest rate for investment of Re. 1, he will receive ₹ 1·10 at the end of 1 year, and if he re-invests it for another year then he will receive 110% of that amount at the end of the 2nd year i.e. ₹ 1·21 (₹ 1 × 1·1 × 1·1).

This is the concept of compound interest. It is the interest received on original amount as well as on any interest earned by not withdrawing during the earlier periods. This concept can be further explained with the help of a mathematical model.

(a) Model showing the future value of single cash flow

Let 'i' represent interest rate per period,
'm' = no. of periods before the pay-off,
'F' = future value or compounded value.

If the present value P is invested at 'i' rate of interest for 1 year then the future value $F_1 = (P+i)$ at the year end will be —

Future Amount = Principal amount + Principal × Interest

$$F_1 = P + P \cdot i$$
$$= P(1+i)$$

The outstanding amount at the beginning of 2nd year is $F_1 = P(1+i)$. If it is being reinvested for another year, the compound amount at the end of 2nd year will be —

$$F_2 = F_1 + F_1 \times i$$
$$\text{or, } F_2 = P + P \times i + (P + P \times i) \times i$$
$$= P(1+i) + P(1+i)i$$
$$= P(1+i)(1+i)$$
$$= P(1+i)^2$$
$$\therefore F_2 = P(1+i)^2.$$

Similarly, if we re-invest the value of F_2 for one more year then after the 2nd year —

$$F_3 = F_2 + F_2 \cdot i$$
$$= F_2(1+i)$$
$$= P(1+i)^2(1+i)$$
$$= P(1+i)^3$$

In this way the future value of a lumpsum amount after 'n' periods will be —

$$F_n = P(1+i)^n.$$

The term $(1+i)^n$ is known as compound value ~~factor~~ interest factor (CVIF) of a lumpsum of ₹1. It always has a positive value greater than 1. Therefore to compute the future value of lumpsum amount, we should simply multiply the principal amount with compound value interest factors for a given interest rate 'i' and time period 'n' and symbolically the equation will be —

$$F_n = P(CVIF_{i,n})$$

(b) Multi-period Compounding of a single cash flow

Formula –

$$A = P\left(1 + \frac{i}{m}\right)^{mn}$$

where, P = Principal amount
i = Interest rate per annum
m = Number of times for which compounding is made per year
n = No. of years for which compounding has to be done.

(c) Compounding of a series of unequal cash flows

For example, an individual is investing for 5 years at an annual interest rate of 10%. The investments are –

End of 1st year – ₹1000
End of 2nd year – ₹1500
End of 3rd year – ₹2000
End of 4th year – ₹2500
End of 5th year – ₹3000

End of year (a)	Amount invested (b)	No. of years compounded (c)	CVIF (d)	Future Value (₹) (e) = (b) × (d)
1	1,000	4	$(1+0.1)^4 = 1.464$	1,464.00
2	1,500	3	$(1+0.1)^3 = 1.331$	1,996.50
3	2,000	2	$(1+0.1)^2 = 1.21$	2,420.00
4	2,500	1	$(1+0.1)^1 = 1.10$	2,750.00
5	3,000	0	$(1+0.1)^0 = 1.00$	3,000.00
			Total =	₹11,630.50

Illustration 1.

An individual invests ₹ 4,000 at 10% interest rate compounded annually for 5 years. Find out the amount that he would receive after 5 years.

Solution :

Here, the amount that the individual would receive after 5 years can be calculated as follows :

$$A = P(1 + i)^n$$

Where, A = Amount at the end of 5 years

P = Principal amount of investment i.e., ₹ 4,000

i = Interest rate i.e., 10% or 0·10

n = Number of years i.e., 5

$\therefore A = ₹\ 4{,}000\ (1 + 0{\cdot}10)^5$

$= ₹\ 4{,}000\ (1{\cdot}10)^5$

$= ₹\ 4{,}000\ (1{\cdot}6105)$

$= ₹\ 6{,}442.$

Illustration 2.

Mr. X deposits ₹ 1,00,000 in a bank account of 6% interest rate compounded semi-annually for 20 years. Find out the amount that he will receive after 20 years.

Solution :

The amount that Mr. X will receive after 20 years under semi-annual compounding of interest may be computed as follows :

$$A = P\left(1+\frac{i}{m}\right)^{mn}$$

Where, A = Amount at the end of 20 years

P = Principal amount i.e. ₹ 1,00,000

i = Interest rate p.a, i.e. 6% or 0·06

m = Number of times for which compounding is made per year i.e., 2.

n = Number of years i.e., 20

$$\therefore A = ₹\ 1{,}00{,}000\left(1+\frac{0{\cdot}06}{2}\right)^{2\times 20}$$

$= ₹\ 1{,}00{,}000\ (1 + 0{\cdot}03)^{40}$

$= ₹\ 1{,}00{,}000\ (3{\cdot}262)$

$= ₹\ 3{,}26{,}200$

[Here, factor $\left(1 + \frac{i}{m}\right)^{mn} = (1{\cdot}03)^{40} = CVIF_{3,\,40} = 3{\cdot}262$]

Illustration 3.

Mr. Z deposits ₹ 50,000 in a bank account for 5 years at 8% interest rate compounded quarterly. Find out the amount that he will get after 5 years.

Solution :

The amount that Mr. Z will receive after 5 years under quarterly compounding of interest can be computed as follows :

$$A = P\left(1+\frac{i}{m}\right)^{mn}$$

Where , P = ₹ 50,000

i = 8% or 0·08

m = 4

n = 5

$$\therefore A = ₹\,50{,}000\left(1+\frac{0{\cdot}08}{4}\right)^{4\times5}$$

$$= ₹\,50{,}000\,(1+0{\cdot}02)^{20}$$

$$= ₹\,50{,}000\,(1{\cdot}486)$$

$$= ₹\,74{,}300$$

[Here, factor $\left(1+\frac{i}{m}\right)^{mn} = (1{\cdot}02)^{20} = CVIF_{2,20} = 1{\cdot}486$]