

# **Business Finance**

## **Unit 1**

### **Introduction**

Finance can be defined as the art and science of managing money. Virtually, all individuals and organizations earn or raise money and spend or invest money. Finance is concerned with the process, institutions, markets, and instruments involved in the transfer of money among individuals, business, and governments.

### **Meaning and Scope of Financial Management**

Financial management as an academic discipline has undergone fundamental changes with regard to its scope and coverage. In the earlier years, it was treated synonymously with the raising of funds. In the later years, its broader scope, included in addition to the procurement of funds, efficient use of resources.

### **Scope of Financial Management**

Financial Management is broadly concerned with the acquisition and use of funds by a business firm. The important tasks of financial management, as related to the above, may be categorized as follows:

- Financial Analysis, Planning and Control
- Analysis of financial condition and preference
- Profit planning.
- Financial forecasting
- Financial control

### **Goals/Objectives of Financial Management—Profit Maximization vs. Wealth Maximization**

#### ***Traditional Approach—Profit Maximization***

It has been traditionally argued that the objective of a company is to earn profit. This means that the finance manager has to make decision in a manner that the profit is maximised. Each alternative, therefore, is to be seen as to whether or not it gives maximum profit. Profit maximization objective gives rise to a number of problems as below:

1. Profit maximization concept should be considered in relation to risks involved. There is a direct relationship between risk and profit. Many risky propositions yield high profit. Higher the risk, higher is the possibility of profits. If profit maximization is the only goal, then risk factor is altogether ignored.
2. Profit maximization, as an objective does not consider time pattern of return.
3. Profit maximization, as an objective is too narrow. It fails to take into account the social considerations as also the obligations to various interests of workers, consumers, society as well as ethical trade practices. Further, most business leaders believe that adoption of ethical standards strengthen their competitive positions.
4. Profits do not necessarily result in cash flows available to the stockholder. Owners receive cash flow in the form of either cash dividends paid to them or proceeds from selling their shares for a higher price than paid initially.

### ***Modern Approach—Wealth Maximization***

The alternative to profit maximization is wealth maximization. This is also known as Value Maximization or Net Present Worth Maximization. Value is represented by the market price of the company's equity shares. Prices in the share market at a given point of time, are the result of many factors like general economic outlook, particularly if the companies are under consideration, technical factors and even mass psychology. However, taken on a long-term basis, the share market prices of a company's shares do reflect the value, which the various parties put on a company. Normally, the value is a function of two factors:

1. The likely rate of earnings per share (EPS) of a company and
2. The capitalization rate.

EPS are calculated by dividing the periods total earnings available for the firm's common shares by the number of shares of common shares outstanding. The likely rate of earnings per share (EPS) depends on the assessment as to how profitably a company is going to operate in the future.

### ***What about Stakeholders?***

Stakeholders are groups such as employees, customers, suppliers, creditors, owners and others who have a direct economic link to the firm. A firm with a stakeholder focus, consciously avoids actions that would prove detrimental to stakeholders. The goal is not to maximize stakeholder wellbeing but to preserve it. It is expected to provide long-run benefit to shareholders by maintaining positive stakeholder relationships. Such relationship should minimize stakeholder turnover, conflicts and litigation. Clearly, the firm can better achieve its goal of shareholder wealth maximization by maintaining cooperation with other stakeholders rather than having conflict with them.

## **Finance Functions**

Financial Management is, indeed, the key to successful business operations. Without proper administration and effective utilization of finance, no business enterprise can utilize its potentials for growth and expansion. Financial management is concerned with the acquisition, financing, and management of assets with some overall goals in mind. In the contents of modern approach, the discussions on financial management can be divided into three major decisions viz., (1) Investing; (2) Financing; and (3) Dividend decision. A firm takes these decisions simultaneously and continuously in the normal course of its business. Firm may not take these decisions in a sequence, but decisions have to be taken with the objective of maximizing shareholders' wealth.

### **Investing**

1. Management of current assets (cash, marketable securities, receivables, and inventories)
2. Capital budgeting (identification, selection, and implementation of capital projects)
3. Managing of mergers, reorganizations, and divestments

### **Financing**

1. Identification of sources of finance and determination of financing mix
2. Cultivating sources of funds and raising funds

## Dividend Decision

This is the third financial decision, which relates to dividend policy. Dividend is a part of profits, which are available for distribution, to equity shareholders. Payment of dividends should be analysed in relation to the financial decision of a firm. There are two options available in dealing with the net profits of a firm, viz., distribution of profits as dividends to the ordinary shareholders' where, there is no need of retention of earnings or they can be retained in the firm itself if they require, for financing of any business activity. But distribution of dividends or retaining should be determined in terms of its impact on the shareholders' wealth. The Financial manager should determine optimum dividend policy, which maximizes market value of the share thereby market value of the firm. Considering the factors to be considered while determining dividends is another aspect of dividend policy.

## Time Value of Money

The Time Value of Money (TVM) concept asserts that the worth of money today is greater than its value in the future due to its potential earning capacity. TVM recognizes the impact of interest rates and inflation on the purchasing power of money over time. It forms the basis for various financial calculations, including present value, future value, annuities, and loan amortization. Understanding TVM helps individuals and businesses make informed decisions regarding investments, savings, loans, and retirement planning, ensuring that they account for the opportunity cost of money and maximize its potential for growth and financial security.

The compensation for waiting is the time value of money is called interest. Interest is a fee that is paid for having the use of money.

### Simple Interest

Interest that is paid solely on the amount of the principal is called **simple interest**. Simple interest is usually associated with loans or investments that are short-term in nature. The computation of simple interest is based on the following formula:

$$\text{Simple interest} = \text{Principal} \times \text{Interest Rate Per Time Period} \times \text{Number of Time Period}$$

### Compound Interest

Compound interest refers to the interest earned or paid on both the initial principal and any accumulated interest from previous periods. Unlike simple interest, which is calculated only on the principal amount, compound interest allows for exponential growth or increase in the value of an investment or debt over time.

The compound interest formula is expressed as:

$$A = P \left( 1 + \frac{r}{n} \right)^{nt}$$

Where:

- $A$  is the future value of the investment/loan, including interest
- $P$  is the principal amount (initial investment/loan amount)
- $r$  is the annual nominal interest rate (in decimal)
- $n$  is the number of times interest is compounded per year
- $t$  is the time the money is invested/borrowed for, in years

Compound interest is a fundamental concept in finance and plays a significant role in investment growth, savings, loan repayment calculations, and understanding the time value of money.

For example: The formula for quarterly compounding is:

$$A = P \left( 1 + \frac{r}{4} \right)^{4t}$$

### Terminal Value

Terminal value is the estimated value of an investment at the end of a specified period or perpetually. In financial analysis, it's often used in discounted cash flow (DCF) models to determine the total value of an investment beyond the forecast period. Terminal value estimation accounts for future cash flows, growth prospects, and industry trends, allowing stakeholders to assess the overall value and viability of an investment. It plays a pivotal role in strategic decision-making, investment appraisal, and financial modelling, enabling stakeholders to make informed decisions regarding resource allocation and investment strategies.

### Present Value

Present value (PV) is a financial concept that represents the current value of a future sum of money, discounted at a specific rate of return. It's based on the principle that a dollar today is worth more than a dollar received in the future due to the opportunity cost of capital and the effects of inflation.

The formula to calculate present value is:

$$PV = \frac{FV}{(1 + r)^n}$$

Where:

- $PV$  = Present value
- $FV$  = Future value of the sum of money
- $r$  = Discount rate or rate of return per period
- $n$  = Number of periods in the future

Present value calculations are fundamental in various financial analyses, including investment appraisal, capital budgeting, and financial planning. They help individuals and businesses make informed decisions by assessing the current worth of future cash flows, investments, or liabilities.

### **Relationship Between Present Value and Discount Rate**

The relationship between present value (PV) and the discount rate is inverse and fundamental in financial valuation. The discount rate is the rate used to discount future cash flows to their present value. Here's how the two are related:

#### *1. Inverse Relationship:*

- As the discount rate increases, the present value decreases.
- Conversely, as the discount rate decreases, the present value increases.

#### *2. Impact on Present Value:*

- A higher discount rate reflects a higher opportunity cost of capital or a higher expected rate of return. Therefore, future cash flows are discounted more heavily, resulting in a lower present value.
- A lower discount rate implies a lower opportunity cost of capital or a lower expected rate of return. Consequently, future cash flows are discounted less, leading to a higher present value.

### 3. *Sensitivity of Present Value to Discount Rate:*

- Present value is highly sensitive to changes in the discount rate, especially for cash flows that occur further in the future.
- Small changes in the discount rate can lead to significant changes in the present value of long-term cash flows.

### 4. *Investment Decision Making:*

- The discount rate is often used to assess the risk associated with an investment or project. A higher discount rate implies higher perceived risk, which translates to a lower present value.
- Investors and analysts use sensitivity analysis to evaluate how changes in the discount rate affect the present value of future cash flows and, consequently, investment decisions.

## **Present and Future Value of Annuities**

An **annuity** is a series of equal payments made at equal time intervals, with compounding or discounting taking place at the time of each payment. Each annuity payment is called a **rent**. There are several types of annuities, out of which in an ordinary annuity each rent is paid or received at the **end** of each period.

### **Future Value of Annuity of ₹1**

If you open a savings account that compounds interest each month, and at the end of each month you deposit ₹100 in the savings account, your deposits are the rents of an annuity. After 1 year, you will have 12 deposits of ₹100 each, and a total of ₹1200, but the account will have more than ₹1200 in it because each deposit earns interest. If the interest rate is 6 per cent a year, compounded monthly, your balance is ₹1233.56. The future value of an annuity or amount of annuity is the sum accumulated in the future from all the rents paid and the interest earned by the rents. The abbreviation FV is used for the future value of an annuity to differentiate it from the lower case fv used for the future value of ₹1.

### **Present Value of Annuity of ₹1**

The present value of an annuity is the sum that must be invested today at compound interest in order to obtain periodic rents over some future time.

### **Amortization of Loans**

Amortizing a loan entail systematically repaying both the principal amount borrowed and accrued interest over a specified period through regular instalment payments. Each payment reduces the principal balance while covering the interest due. Over time, the interest portion decreases, and the

principal portion increases, facilitating the loan's full repayment by the end of the term. A predetermined amortization schedule outlines each payment's allocation between principal and interest, aiding borrowers in tracking their repayment progress. Amortizing loans, common in mortgages and car loans, offer predictability and help borrowers build equity in financed assets while ensuring lenders receive a steady stream of interest income.

## **Bonds**

A bond is a type of debt instrument that represents a loan made by a creditor to a bond issuer—typically a government or corporate entity. The issuer borrows the funds for a defined period at a variable or fixed interest rate.

Companies, municipalities, states, and sovereign governments issue bonds in order to raise capital and finance a variety of projects, activities, and initiatives. For companies, bond issuance offers an alternative to stock issuance, which can impact company value.

Investors, on the other hand, purchase bonds because of the predictable and stable income they offer compared to other investment vehicles, like stocks. If a bond is held until it matures, the bondholder will have earned back their entire principal, making bonds a way for investors to preserve capital while earning a profit.

### **What Is Bond Valuation**

Bond valuation is the process of determining the fair price, or value, of a bond. Typically, this will involve calculating the bond's cash flow—or the present value of a bond's future interest payments—as well as its face value (also known as par value), which refers to the bond's value once it matures.

A bond's interest payments and face value are fixed. This allows an investor to determine what rate of return a bond needs to provide to be considered a worthwhile investment.

Some other terms that can be helpful in understanding bond valuation include:

- *Maturity date:* This refers to the length of time until the bond's principal is scheduled to be repaid to the bondholder. The maturity date can be short- or long-term. Once the date is reached, the bond's issuer—whether corporate or governmental—must repay the bondholder the full-face value of the bond.
- *Coupon rate/discount rate:* This refers to the interest payments that a bondholder receives. Typically, it's represented as a fixed percentage of the bond's face value. Payments may be made annually or semi-annually, depending on the specifics of the bond.
- *Current price:* This refers to a bond's current value and is typically what's discussed when someone mentions “bond valuation.” Depending on several different factors, including market conditions, the current price of a bond may be at, above, or below par value.

In finance, the value of something today is the present value of its discounted cash flows.

### **How To Price A Bond**

The price of a bond can be determined by following a few steps and plugging numbers into equations.

1. *Determine the Face Value, Annual Coupon, and Maturity Date*

Before performing any calculations to value a bond, you need to identify the numbers that you'll need to plug in to equations later in the process. Determine the bond's face value, or par value, which is the bond's value upon maturity. You also need to know the bond's annual coupon rate, which is the annual income you can expect to receive from the bond. Lastly, determine what your bond's maturity date is.

## 2. Calculate Expected Cash Flow

Next, calculate cash flows using the bond's face value, annual coupon, and maturity date.

$$\text{Cash Flow} = \text{Annual Coupon Rate} \times \text{Face Value}$$

## 3. Discount the Expected Cash Flow to the Present

After calculating cash flow, discount the expected cash flow to the present.

$$\text{Cash Flow} \div (1+r)^t$$

In the above formula, "r" represents the interest rate, and "t" represents the number of years for each of the cash flows.

## 4. Value the Various Cash Flows

Now, you're ready to value the individual cash flows and final face value payment in order to value your bond as a whole.

To value your cash flows, use the following formula for each year:

$$\text{Cash Flow Value} = \text{Cash Flow} \div (1+r)^1 + \text{Cash Flow} \div (1+r)^2 \dots + \text{Cash Flow} \div (1+r)^t$$

Next, value the final face value payment that you'll receive at the bond's maturity using the following formula:

$$\text{Final Face Value Payment} = \text{Face Value} \div (1+r)^t$$

Add together the cash flow value and the final face value placement, and you've successfully calculated the value of your bond.

## Perpetual Dividend Growth Model

The perpetual dividend growth model, also known as the Gordon Growth Model, is a method used to value a stock by assuming that dividends will continue to grow at a constant rate indefinitely. This model is based on the premise that the intrinsic value of a stock is the present value of all its future dividend payments. Here's the formula for the perpetual dividend growth model:

$$P = \frac{D_1}{r - g}$$

where:

- P = Current stock price
- g = Constant growth rate expected for dividends, in perpetuity
- r = Constant cost of equity capital for the company (or rate of return)
- D<sub>1</sub> = Value of next year's dividends

## **Importance of the Gordon Growth Model**

The GGM attempts to calculate the fair value of a stock irrespective of the prevailing market conditions and takes into consideration the dividend payout factors and the market's expected returns. If the value obtained from the model is higher than the current trading price of shares, then the stock is considered to be undervalued and qualifies for a buy, and vice versa.

Dividends per share represent the annual payments a company makes to its common equity shareholders, while the growth rate in dividends per share is how much the rate of dividends per share increases from one year to another. The required rate of return is the minimum rate of return investors are willing to accept when buying a company's stock, and there are multiple models investors use to estimate this rate.

## **Assumptions of the Gordon Growth Model**

The Gordon growth model values a company's stock using an assumption of constant growth in dividend payments that a company makes to its common equity shareholders. The GGM assumes that a company exists forever and pays dividends per share that increase at a constant rate.

To estimate the intrinsic value of a stock, the model takes the infinite series of dividends per share and discounts them back to the present using the required rate of return.

## **Limitations of the Gordon Growth Model**

The main limitation of the Gordon growth model lies in its assumption of constant growth in dividends per share. It is very rare for companies to show constant growth in their dividends due to business cycles and unexpected financial difficulties or successes. The model is thus limited to firms showing stable growth rates.

The second issue occurs with the relationship between the discount factor and the growth rate used in the model. If the required rate of return is less than the growth rate of dividends per share, the result is a negative value, rendering the model worthless. Also, if the required rate of return is the same as the growth rate, the value per share approaches infinity.