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MODULE 4

1. Why is the cost of capital the minimum acceptable rate of return on an investment?

Brian O'Connell (2018) defines Minimum acceptable rate of return as the minimum profit expected by an investor from an investment and the opportunity cost of undertaking it. It's a useful way of weighing up whether an investment is worth the risk associated with it. Therefore, to calculate the MAAR, you need to look at different aspects of the investment opportunity, including the opportunities for expanding operation and rate of return on investment.

However, its essential to consider cost of capital as minimum acceptable rate of return on investment because of the following.

- The cost of capital enables businesses and investors in evaluating all investment opportunities by turning future cash flows into present value by keeping it discounted.
- The cost of capital also helps in making key company budget calls that use company financial sources as capital.
- The cost of capital can be used to evaluate the progress of ongoing projects and investments by matching up the progress of those investments against the cost of capital especially in an opportunity cost.
- Maximization of firm value. Cost of capital has judicious mix of debt and equity in the capital structure of a firm so that business doesn't bear undue financial risks
- Cost of capital provides a budgeting decision to the firm especially in the internal rate of return method where the project will be accepted if it has it has greater cost of return than the cost of capital.
- Cost of capital is used for taking decisions regarding leasing a business concern.
- The cost of capital is used to calculate the cost of carrying investment in receivables and to evaluate alternative policies regarding receivables hence, it will be used for managing working capital in Investment.
- Cost of capital is significant factor in taking dividend decisions. The dividend policy of a firm should be formulated according to the nature of the firm whether it is a growth firm, normal firm or declining firm.

- Determination of capital structure. Cost of capital influences the capital structure of a firm by designing optimum capital structure that is the proportion of debt and equity, due importance is given to the overall or weighted average cost of capital of the firm.
- The concept of capital can be used to evaluate financial performance of an investment and can be done by comparing the actual profitability of the investment project and the overall cost of capital

2. How is the Cost of Debt Capital ascertained? Give examples.

Cost of Debt is defined as an effective rate in which a company pays on its current debt. However, in most cases, this phrase refers to after tax cost of debt but it also means the company's cost of debt before taking taxes into account

- Cost of debt is one part of a company's capital structure, which also includes the cost of equity. Capital structure deals with how a firm finances its overall operations and growth through different sources of funds, which may include debt such as bonds or loans, among other types.
- The cost of debt measure is helpful in understanding the overall rate being paid by a company to use these types of debt financing. The measure can also give investors an idea of the company's risk level compared to others because riskier companies generally have a higher cost of debt.
- To calculate cost of debt, a company must determine the total amount of interest it is paying on each of its debts for the year. Then it divides this number by the total of all of its debt. The quotient is its cost of debt.
- To calculate after-tax cost of debt, subtract a company's effective tax rate from 1, and multiply the difference by its cost of debt. Do not use the company's marginal tax rate; rather, add together the company's state and federal tax rate to ascertain its effective tax rate.

3. How will you calculate the Cost of Preferences Share Capital?

Cost of preference share capital is that part of cost of capital in which we calculate the amount which is payable to preference shareholders in the form of dividend with fixed rate.

Formula: Cost of preference share capital (K_p) = amount of preference dividend/preference share capital $K_p = D/P$

- In adjustment case cost of preference share capital $K_p = D/NP$, where D = Annual preference dividend, NP = Net proceed = Par value of preference share capital – discount- cost of floatation or NP = Par value of preference share capital + premium
- Preference shares represent a special type of ownership interest in the firm. They are entitled to a fixed dividend, but subject to availability of profit for distribution. The preference shareholders must be paid their fixed dividends before any distribution of dividends to the equity shareholders. Their dividends are not allowed as an expense for taxation. In fact, the preference dividend is a distribution of profits of a business because dividends are paid out of profits after taxes, the question of after tax or before tax costs of preference shares does not arise as in case of cost of debenture.

Preference shares can be divided into:

- Irredeemable preference shares
- Redeemable preference shares

1) Cost of Irredeemable preference shares

Irredeemable preference shares are those shares issued by which the company has no obligation to pay back the principal amount of the shares during its lifetime. The only liability of the company is to pay the annual dividends. The cost of irredeemable preference shares is:

$$K_p (\text{cost of pref. share}) = \frac{\text{Annual dividend of preference shares}}{\text{Market price of the preference stock}}$$

Cumulative preference shares:

In case of cumulative preference shares, the market price of the preference stock will be increased by such amount of dividend in arrears. Cumulative preference shares are those shares whose dividends will get accumulated if they are not paid periodically. All the arrears of cumulative preference shares must be paid before paying anything to the equity shareholders.

Non-cumulative preference shares:

These are preference shares whose dividends do not get carried forward to the next year if they are not paid during a year.

- If the company issues new preference shares, the cost of preference capital would be:

$$K_p = \text{Annual dividend} / \text{Net proceeds after floatation costs, if any.}$$

- If the floatation costs are expressed as percentage, the formula will take the following shape:

$$K_p = \text{Annual dividend} / \text{Net proceeds}(1 - \text{floatation costs})$$

2) Cost of Redeemable preference shares

Redeemable preference shares are those shares which have a fixed maturity date at which they would be redeemed.

Cost of Redeemable preference shares =

$$\frac{\text{Annual Dividend} + (\text{Redeemable Value} - \text{Sale value}) / \text{Number of years for redemption}}{(\text{Redeemable Value} + \text{Sale value}) / 2}$$

Or

$$K_p = \frac{D + (RV - SV) / N}{(RV + SV) / 2}$$

4. The following details are available:

Equity (Expected Dividend 12%)	Rs. 1,000,000
Tax Rate	50%
10% Preference	Rs. 500,000
8% Loan	Rs. 1,500,000

You are required to calculate Weighted Average Cost of Capital?

Solution

$$WACC = K_e \cdot (E/V) + K_d \cdot (1 - \text{Tax \%}) \cdot (D/V)$$

where

K_e = Cost of equity (Rs 1,000,000)

E = Market cost of equity (RS 500,000),

V = Market value of equity + Market value of Debt (Rs 1,500,000 + 500,000),

D = Market value of debt (Rs 1,500,000),

K_d = Cost of Debt (Rs 8%) and tax % = 50%.

Cost of debt = 500,000

$$1,000,000 \cdot \frac{500,000}{2,000,000} + \frac{(8 \cdot 500,000 + 50 \cdot 500,000)}{100} \cdot \frac{1,500,000}{2,000,000}$$

$$1,000,000(0.25) + (40,000 + 250,000) \cdot (1 - 0.75)$$

$$250,000 + 290,000 (1 - 0.75)$$

$$250,000 + (250,000 - 217,500)$$

$$250,000 + 72,500$$

$$= 322,500 / 1,000,000$$

∴ The WACC = 33%

5. What is Net Present Value and how does it change by variation in discount rate.

Net profit value is the difference between the present value of cash inflows and the present value of cash outflows over a period of time.

Net present value (NPV) is a method used to determine the current value of all future cash flows generated by a project, including the initial capital investment. It is widely used in capital budgeting to establish which projects are likely to turn the greatest profit.

The formula for NPV varies depending on the number and consistency of future cash flows. If there's one cash flow from a project that will be paid one year from now, the calculation for the net present value is as follows:

$$NPV = \sum_{t=0}^n \frac{R_t}{(1+i)^t}$$

where:

R_t = net cash inflow outflows during a single period

i = discount rate or return that could be earned in alternative investments.

t = number of time periods

The required rate of return is used as the discount rate for future cash flows to account for the time value of money. A dollar today is worth more than a dollar tomorrow because a dollar can be put to use earning a return. Therefore, when calculating the present value of future income, cash flows that will be earned in the future must be reduced to account for the delay.

NPV is used in capital budgeting to compare projects based on their expected rates of return, required investment, and anticipated revenue over time. Typically, projects with the highest NPV are pursued. For example, consider two potential projects for company ABC:

How to Calculate Net Present Value (NPV) Summary

Net present value discounts all the future cash flows from a project and subtracts its required investment. The analysis is used in capital budgeting to determine if a project should be undertaken when compared to alternative uses of capital or other projects.

The Discounted cash flow concept (DCF) is an application of the time value of money principle—the idea that money that will be received or paid at some time in the future has less value, today, than an equal amount collected or paid today.

The DCF calculation finds the value appropriate today the present value for the future cash flow. The term "discounting" applies because the DCF "present value" is always lower than the cash flow future value.

In modern finance, "time value of money" concepts play a central role in decision support and planning. When investment projections or business case results extend more than a year into the future, professionals trained in finance usually want to see cash flows presented in two forms, with discounting and without discounting. Financial specialists, that is, want to know the time value of money impact on long-term projections.

6. Distinguish between NPV and PI. Which of these you consider better?

Net present value (NPV) is the difference between the present value of cash inflows and the present value of cash outflows over a period of time while A price index is a normalized average of price relatives for a given class of goods or services in a given region, during a given interval of time while Profitability index is a ratio between the discounted cash inflow to the initial cash outflow

- NPV is a statistic designed to help to compare how these price relatives, taken as a whole, differ between time periods or geographical locations.
- PI presents a value which says how many times of the investment is the returns in the form of discounted cash flows.
- NPV is the first and foremost measure of investment evaluation, compared to other methods such as determining the rate of return, payback period, internal rate of return (and Profitability Index).
- The Profitability index can serve as a substitute for NPV when determining the profits per dollar of investment.
- A profitability index measure of 1.0 is likely the lowest desired number, and if it is lower than that, it signifies that the present value of the project is lower than the initial investment. Therefore, the project would probably be discarded.

Conclusion

Net Present Value is considered as one of the most desirable types of evaluation, analysis, and selection of great investments. However, we should note that we have to be very careful when estimating cash flows, since an incorrect cash flow estimation may lead to deceptive NPV.

7. What are the limitations of using the NPV and IRR methods in practice? Give your assessment.

Net present value (NPV) is the difference between the present value of cash inflows and the present value of cash outflows over a period of time while internal rate of return (IRR) is a calculation used to estimate the profitability of potential investments.

Both measurements are primarily used in capital budgeting, the process by which companies determine whether a new investment or expansion opportunity is worthwhile. Given an investment opportunity, a firm need to decide whether undertaking the investment will generate net economic profits or losses for the company.

Determining NPV. To do this, the firm estimates the future cash flows of the project and discounts them into present value amounts using a discount rate that represents the project's cost of capital and its risk.

Determining IRR. To do this, a company must figure out if the project has a positive NPV, but from a business perspective, the firm should also know what rate of return will be generated by this investment through recalculating the NPV equation, this time setting the NPV factor to zero, and solve for the now unknown discount rate.

Limitations of Using NPV and IRR Methods

Limitations of Net Profit Value (NPV)	Limitation of Internal Rate of Return (IIR)
<ul style="list-style-type: none">• Certainties of in accuracy. Sometimes Net Profit value doesn't give you accurate decision when the two or more projects are of unequal life which doesn't provide directives for growth or loss.• Duration of the project. Net Profit Value doesn't give the clarity how long a project or investment will generate positive NPV due to simple calculation.	<ul style="list-style-type: none">• Internal Rate of Return tells you to accept the project or investment plan where the IRR is greater than weighted average cost of capital but in case if discount rate changes every year than it is difficult to make such comparison.• If there are two or more mutually exclusive projects (they are the projects where acceptance of one project rejects the other

<ul style="list-style-type: none"> • Net Profit Value method suggests accepting that investment plan which provides positive Net Profit Value, but it doesn't provide accurate answer at what period of time you will achieve positive Net Profit Value • Calculating appropriate discount rate for cash flows is difficult. 	<p>projects from concern) than in that case too Internal Rate of Return is not effective.</p> <ul style="list-style-type: none"> • Ignores Size of Project. IRR method does not account for the project size when comparing projects where cash flows are simply compared to the amount of capital outlay generating those cash flows. • Ignores reinvestment rates. Although the Internal Rate of Return (IRR) allows you to calculate the value of future cash flows, it makes an implicit assumption that those cash flows can be reinvested at the same rate as the IRR which is not practical.
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Conclusively, I can conclude that if you are evaluating two or more mutually exclusive projects so better go for Net Profit Value (NPV) method instead of Internal Rate of Return (IRR method. It is safe to depend on NPV method for selecting the best investment plan due to its realistic assumptions & better measure of profitability. Even you can make use of IRR method it is a great complement to NPV and will provide you accurate analysis for investment decisions.

8. What purpose do capital markets serve?

Capital markets are venues where savings and investments are channeled between the suppliers who have capital and those who are in need of capital. The entities who have capital include retail and institutional investors while those who seek capital are businesses, governments, and people.

Capital markets are composed of primary and secondary markets. The most common capital markets are the stock market and the bond market.

- Capital markets seek to improve transactional efficiencies. These markets bring those who hold capital and those seeking capital together and provide a place where entities can exchange securities through capital formation which aids development.
- Avenue provision of investment. Capital markets acts as a house for effective planning and implementation of investment objectives.
- Speed up economic growth and development. Through its investment focus, it resulted into rapid economic growth and development in the country.
- Capital markets are composed of the suppliers and users of funds. Suppliers include households and the institutions serving them pension funds, life insurance companies, charitable foundations, and non-financial companies that generate cash beyond their needs for investment.
- Proper regulation of funds. Capital markets sets policies for the usage of funds in investment sector for developmental aspects.
- Service provision. Capital markets is responsible for ensuring that services are provided to both investors and beneficiaries / customers of the project.
- Continuous availability of funds. Capital market is responsible for generating income for investment purposes as well as development is concerned through convincing donors and the private sector concern for funding and development.
- Mobilization of savings. Capital market is responsible for securing savings culture that will be used in the long run to fight for poverty.
- Capital markets are composed of the suppliers and users of funds. Suppliers include households and the institutions serving them pension funds, life insurance companies, charitable foundations, and non-financial companies that generate cash beyond their needs for investment.

- Capital markets are used to sell financial products such as equities and debt securities. Equities are stocks, which are ownership shares in a company. Debt securities, such as bonds, are interest-bearing IOUs.
- The capital market plays a significant role in the financial system. Savings and investments are vital for economic development of an economy. For instance, savings of surplus units are transmitted into long-term investments by deficit units.
- Allocation of scarce financial resources to the most productive uses at a low cost through its price mechanism which works through incentives and penalties.

9. What are the factors that would go into deciding whether a company should resort to debt or equity for financing its requirement of long-term funds?

There are a number of ways to finance a business and a range of lenders and investors to choose from when a business owner is making financing decisions. Financing can come in the form of debt or investment, and the terms of the financing can vary significantly between the two.

Important factors to consider when choosing methods of financing a business include the following.

- Consider the Repayment Terms. Consider how long the financing arrangement is structured to last. Longer loans can build up a significant amount of interest over time, but loans with shorter terms can require larger periodic payments.
- Interest and fee structures. Add up all the costs associated with each financing method such as costs for loans including interest rates, organization fees and broker fees before making a decision.
- Lender Financing Requirements. Consider the personal requirements each lender and investor places on applicants. Pursue financing from sources whose requirements you meet in full.
- Additional financing requirements. If you are thinking about financing your business through investment, look into all the ramifications of your decision before moving ahead.
- Selling shares of stock to finance a business has its own set of vital considerations, including the possibility of losing managerial control in the future and falling victim to a takeover from a larger company.

10. Discuss the role of an underwriter in managing an IPO.

An underwriter is any party that evaluates and assumes another party's risk for a fee. The fee is often a commission, premium, spread, or interest. Underwriters are critical to the financial world including the mortgage industry, insurance industry, equity markets, and common types of debt security trading.

However, an initial public offering, commonly known as an IPO, is the process of selling corporate shares in an open stock exchange for the first time. The underwriter is a financial specialist who specializes in IPOs and plays a critical role. The IPO is usually one of the rare make-or-break moments in the life of a firm, and its success or failure can have serious long-term ramifications.

- The underwriter is usually an investment bank that employs IPO specialists. These bankers ensure that the firm satisfies all regulatory requirements, such as filing with the appropriate bodies and depositing all fees, and makes all mandatory financial data available to the public.
- The underwriter contacts large prospective buyers of stock, such as mutual funds and insurance companies who have large sums of money to invest.
- The underwriter takes the pulse of prospective buyers and then recommends an IPO price to the firm. This is the price at which the shares will be sold.
- The underwriter usually provides a guarantee to the firm to sell a specific quantity of stock during the IPO process. Should the underwriter fail to convince prospective investors to buy these many shares, it must buy the surplus itself.
- The underwriter work especially hard to sell all available shares. Should the underwriter end up with a great quantity of stock, which it was forced to buy from the issuing firm, it will sell these shares in the open market.
- Underwriters also contribute to sales-type activities; for example, in the case of an initial public offering (IPO), the underwriter might purchase the entire IPO issue and sell it to investors.
- Underwriters are critical to the financial world including the mortgage industry, insurance industry, equity markets, and common types of debt security trading.

11. Why is a stock exchange an important institution of the capital markets?

Michael. H (2011) defines stock exchange as a facility where stock brokers and traders can buy and sell securities, such as shares of stock and bonds and other financial instruments. Stock exchanges may also provide facilities for the issue and redemption of such securities and instruments and capital events including the payment of income and dividends. However, the following are the importance of stock exchange in capital market.

- Effective mobilization of savings attraction. Stock exchange is responsible of providing an organized market for an individual as well as institutional investors which regulates the trading transactions with proper rules and regulations to ensure investors protection which will helps in consolidating the confidence of investors and small savers.
- Promoting capital formation. The funds mobilized through capital market are provided to the industries engaged in the production of various goods and services useful for the society which will result into capital formation and development of national assets through savings.
- Wider Avenues of investment. Stock exchange provides a wider avenue for the investment to the people and organization with investible surplus companies from diverse industries like information technology, steel, fuel and chemicals, cement and fertilizers which offers various kinds of equity and debts securities to the investors through computer network.
- Liquidity of investment. Stock exchange provides liquidity of investment to the investors where they can sell out any of their investments in securities at any time during trading hours on stock exchange.
- Investment priorities. Stock exchange facilitates the investors to decide his or her investment priorities by providing him or her the basket of different kinds of securities of different industries and companies through selling and buying stock exchange.
- Investment safety. Stock exchange through their by-laws, securities and exchange board guidelines, transparent procedures try to provide safety to the investment in industrial securities.
- Wide marketability to securities. Online price quoting system and online buying and selling facility have changed the nature and working of stock exchanges.
- Financial resources for public and private sectors. Stock exchange makes availability of financial resources to the industries in public and private sector through various kinds of securities.

- Fund for development purpose. Stock exchanges enable the government to mobilize the funds for public utilities and public undertakings which take up the developmental activities like power projects, shipping, telecommunications, dams & roads, etra
- Indicator of industrial development. Productivity, efficiency, economic status and prospects of each industry and every unit in an industry is reflected through the price fluctuation of industrial securities
- Barometer of an economy. Stock exchange is economically symbolized by its most significant for its nation. Therefore, stock exchange serves the nation in several ways through its diverse economic services which include imparting liquidity to investments, enabling evaluation and ensuring price continuity of securities.

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