Cost of Capital

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Cost of Capital

- Opportunity cost of making a specific investment.
- Return that could have been earned - alternative investment.
- Rate of return required to persuade the investor to make a given investment.

Equity Dividend Rate

- Determines the annual profitability of a investment
- Tells how much return your initial investment is generating
- Cash-on-Cash return

How to Calculate Equity Dividend Rate?

- Step - 1: Gross Income
  - Add up the total income the property produced(1 year)
  - Include all sources(not just rent)
  - For e.g. - Laundry Machines, Parking fees etc
- Step - 2: Operating Expenses
  - Add up all operating expenses
  - For e.g. - Maintenance, Wages, Property Taxes, Insurance, Supplies etc

- Step - 3: Net Operating Income(NOI)
  - NOI = Gross Income - Operating Expenses
- Step - 4: Pre-Tax Cash Flow
  - Pre-Tax cash Flow = NOI - Σmortgage payments
- Final Step: Equity Dividend Rate(EDR)
  - EDR = (pre-tax cash flow/cash initially invested)*100

An Example

Let's say that you purchase a small apartment building for $1,000,000, and that you spend $250,000 to acquire the property.

- Let Annual Rent = $100,000, Laundry Machines = $5,000
- Gross Income = $100,000+$5,000 = $105,000
- Let, total Operating Expenses = $30,000
- NOI = $105,000 - $30,000 = $75,000
- Let, total Mortgage payments = $50,000
- Pre-Tax Cash Flow = $75,000 - $50,000 = $25,000
- EDR = ($25,000/$250,000)*100 = 10%

Debt: Interest Rate

COST OF DEBT CAPITAL

- The cost of debt is the interest cost that a firm would have to pay for borrowed capital.
- It is simply the cost of using bank's or financial institution's money.
- The banks are compensated in the form of interest on their capital.
- The cost of debt capital is calculated using following formula.

Cost of Debt Capital = Interest Rate * (1 – Tax Rate)

Importance of Cost of Debt

- 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.

Retained Profit

- Profit kept in the company rather than paid out to shareholders as a dividend.
- Retained profits are also under the control of the business.
- Regarded as the important long-term source of finance for a business.
- The decision to retain the earnings or to distribute it among the shareholders is usually left to the company management.
- A growth-focused company may prefer to use the retained earnings to finance expansion activities.

RE calculations

Retained Earnings Formula and Calculation

RE=BP+Net Income (or Loss)−C

Where: BP=Beginning Period RE C= dividends

A way to assess how successful the company was in utilizing the retained money is to look at a key factor called “Retained Earnings To Market Value.”

NPV: Net Present Value

Most people know that money you have in hand now is more valuable than money you collect later on. That's because you can use it to make more money by running a business, or buying something now and selling it later for more, or simply putting it in the bank and earning interest. Future money is also less valuable because inflation erodes its buying power. This is called the time value of money. But how exactly do you compare the value of money now with the value of money in the future? That is where net present value comes in.

Many Definitions

Net present value is the present value of the cash flows at the required rate of return of your project compared to your initial investment.

The aggregate amount of all inflows over time period minus all outflows over same time period.

It is the value of all future cash flows (positive and negative) over the entire life of an investment discounted to the present.

Why are Cash Flows Discounted?

The cash flows in net present value analysis are discounted for two main reasons,

1) *To adjust for the risk of an investment opportunity*
   To account for the risk, the discount rate is higher for riskier investments and lower for a safer one.

2) *To account for the time value of money (TVM)*
   It is required because due to inflation, interest rates, and opportunity costs, money is more valuable the sooner it's received.

Why is NPV Analysis used?

It is used to help determine how much an investment, project, or any series of cash flows is worth.

It takes into account all revenues, expenses, and capital costs associated with an investment in its Free Cash Flow (FCF).

$$NPV_{XYZ} = \frac{Z_1}{1+r} + \frac{Z_2}{(1+r)^2} - X_0$$

Z1 = Cash flow in time 1
Z2 = Cash flow in time 2

r = Discount rate
X0 = Cash outflow in time 0 (i.e. the purchase price / initial investment)

Investment Scenario

Discount Rate	10.0%									
Year	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Discount Factor	0.91	0.83	0.75	0.68	0.62	0.56	0.51	0.47	0.42	0.39
Undiscounted Cash Flow	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000
Present Value	9,091	8,264	7,513	6,830	6,209	5,645	5,132	4,665	4,241	3,855
Net Present Value	**61,446**									

A rational investor would be willing to pay up to $61,466 today to receive $10,000 every year over 10 years.

IRR: Internal Rate of Return

- The internal rate of return (IRR) is a metric used in capital budgeting to estimate the profitability of potential investments.
- The internal rate of return is a discount rate that makes the net present value (NPV) of all cash flows from a particular project equal to zero. IRR calculations rely on the same formula as NPV does.
- The use of "internal" refers to the omission of external factors, such as the cost of capital or inflation, from the calculation.

How To Calculate ?

$$\text{IRR} = \text{NPV} = \sum_{t=1}^{T} \frac{C_t}{(1+r)^t} - C_0 = 0$$

where:

C_t = net cash inflow during the period t

C_0 = total initial investment costs

r = the discount rate, and

t = the number of time periods

Uses Of IRR

- Profitability of an investment
- Maximizing net present value
- Capital management
- Savings and loans
- Fixed income
- Private equity

Disadvantages Of IRR

- Ignores Size of Project
- Ignores Future Costs
- Ignores Reinvestment Rates

CEO’s focus on ROIC

- Maximize the company’s intrinsic value per share
- All decisions are opportunity costs for other decisions
- Pick optimal option
- Various voices to avoid behavioral bias
- Better to avoid large permanent capital loss of shareholders’ capital

- Most companies finance themselves with some combination of debt and equity
- Cost of debt is usually explicit
- Don’t take a low term debt for long term investments
- Cost of equity is impossible to know with certainty
- Keeping required rate of return below a certain level can risk permanent damage to shareholders’ capital

References

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