

A composite image featuring a calculator on the left, a stack of coins on the right, and a line graph in the center. The graph shows a fluctuating line with values ranging from 6,000 to 6,750. The background is a light blue and white color scheme.

FINANCIAL MANAGEMENT

Lecture No. 19

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

FACUALTY PROFILE



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**Several Times Topper in
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& 6 times Appointed
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Financial Terms

Time Value of Money

Time value of money is **the concept that money today is worth more than money tomorrow**. That is because money today can be used, invested, or grown.

Time Value based on Two Concepts

i. PV ii. FV

- **Present value is the current value of future amount (Cash Inflow)**
- **Future value is the value of current amount (cash outflow) in future**

Future Value Formula

$$\text{Future Value (FV)} = \text{PV} \times (1 + r)^n$$

- $\text{PV} = \text{Present Value}$
- $r = \text{Interest Rate (\%)}$
- $n = \text{Number of Compounding Periods}$

Mathematics of the FV

$$\text{FV} = \text{PV} \times (1.00 + i)^n$$

$$\text{FV} = \$10,000 \times (1.00 + 0.02)^8$$

$$\text{FV} = \$10,000 \times (1.02)^8$$

$$\text{FV} = \$10,000 \times 1.172$$

$$\text{FV} = \underline{\underline{\$11,720}}$$

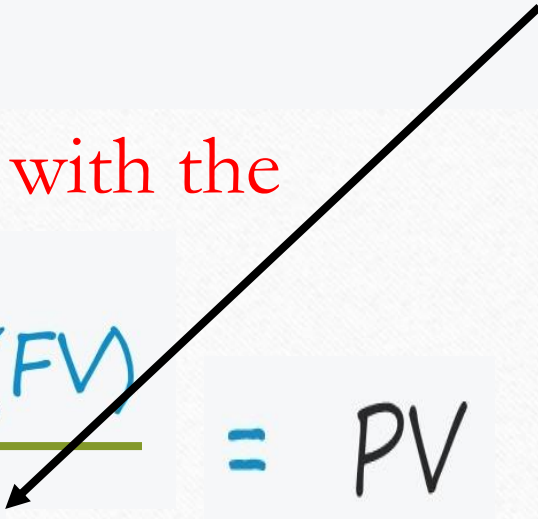
You have Rs. 10000 now

What the value of 10000 after 8 years

If interest rate is 2%

$$\text{Future Value (FV)} = \text{PV} \times (1 + r)^n$$

We can find Present Value with the

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


A person is shown from the chest up, sitting at a desk and working on a laptop. The image is heavily stylized with a dark green overlay and several thick, diagonal white lines that create a sense of movement and structure. A light green rectangular area with a white dot pattern is positioned at the bottom left. The overall aesthetic is modern and professional.

Capital Budget

CAPITAL BUDGETING

Capital budgeting is the process by which investors determine the value of a potential investment project.

The three **most common approaches** to project selection are

- **payback period (PB),**
- **internal rate of return (IRR),**
- **and net present value (NPV).**



TECHNIQUES OF CAPITAL
BUDGETING

INVESTMENT CRITERIA

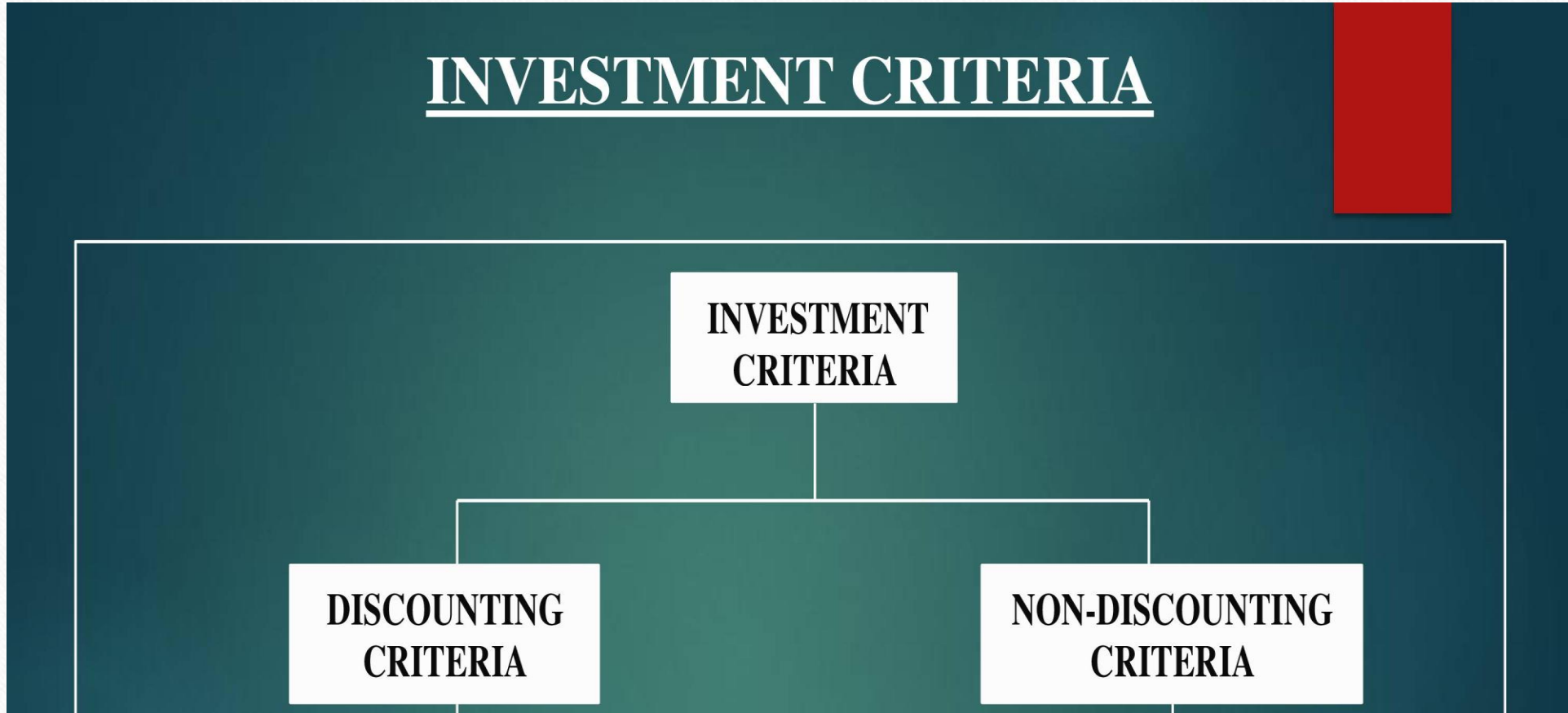
INVESTMENT
CRITERIA

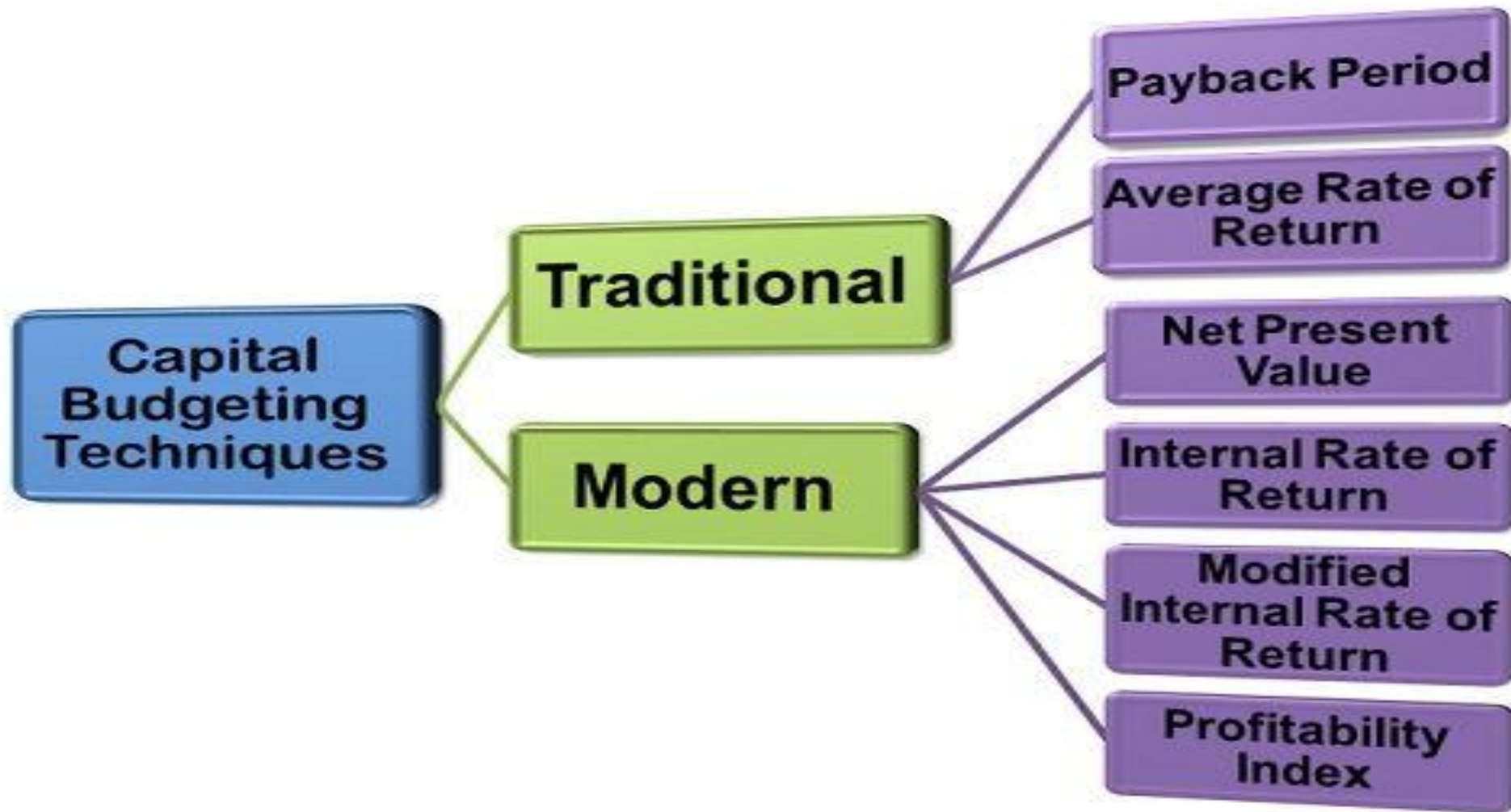
DISCOUNTING
CRITERIA

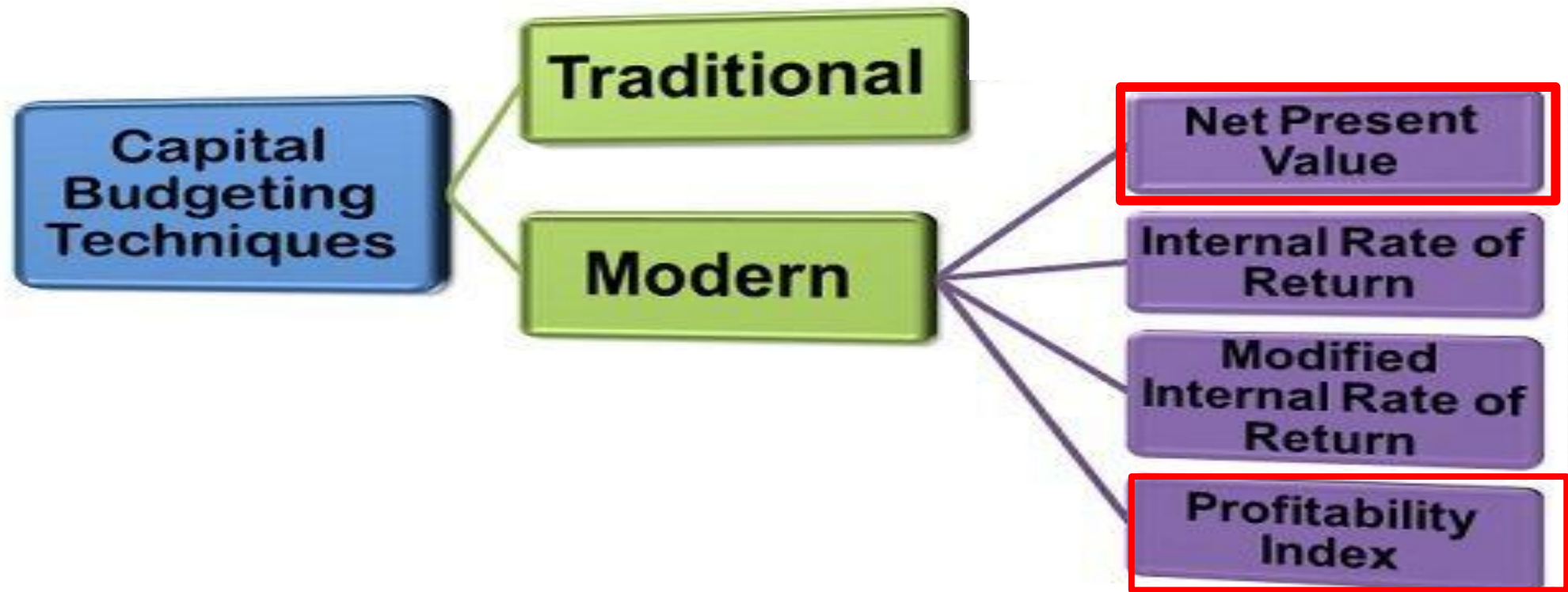
NON-DISCOUNTING
CRITERIA

Modern capital
budgeting

Traditional capital
budgeting







1. Profitability Index

The **Profitability Index** (PI) measures the ratio between the present value of future cash inflows and the initial investment.

Profitability index, also known as **profit investment ratio** and **value investment ratio**.

The profitability Index helps in giving ranks to the projects on the basis of its value, the higher the value the top rank the project gets.

It shows the relationship between the benefits and cost of the project and therefore, it is also called as, **Benefit-Cost Ratio**.

Accept/Reject criteria

Acceptance rule

- $PI > 1$ Accept the project
- $PI < 1$ Reject the project
- $PI = 1$ May accept the project

Profitability Index Calculation

$$\text{PI} = \frac{\text{Present value of future cash inflows}}{\text{Present value of cash outflows}}$$

We can explore the Formula as

$$\text{PV of Cash inflow} = C / (1+r)^t$$

Where,

C_t = cash inflow at the end of year t (Future value)

n = life of the project (years)

r = discount rate or the cost of capital

Profitability Index Calculation

Profitability
Index =

PV of Future Cash inflows

$$\frac{C}{(1+r)^t}$$

Initial Cost } Cash
outflows

Profitability Ratio = Profitability
Index * 100

Merits of Profitability Index

1. It takes into consideration, the **Time Value of Money**.
2. The profits are considered throughout the life of the project.
3. This method helps in giving the ranks to the projects.
4. It also helps in assessing the increase or decrease in the firm's value due to the investments.

Demerits of profitability Index

1. Unlike the NPV, the Profitability Index may sometimes do not offer the correct decision with respect to the mutually exclusive projects (means project with diff life

1. Net Present Value

What Is Net Present Value (NPV)?

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.

“Net present value is the present value of the cash inflows compared to your initial investment,

2. Net Present Value

In Net present value method we compared the difference between the total present value of future cash inflows and the total present value of future cash outflows.

Accept/Reject criteria

If the present value of cash inflows is more than the present value of cash outflows, it would be accepted. If not, it would be rejected.

PV of Cash Inflow $>$ PV of Cash Outflows = Project
Accepted


NPV Calculation

Net Present Value =
PV of Future Cash Flows
- Initial Cash Investment

NPV Calculation

Net Present Value =

PV of Future Cash Flows


$$\text{PV of Cash inflow} = C_t / (1+r)^t$$

We can say

The project should be accepted if NPV is positive (i.e., $NPV > 0$) and to reject it if the net present value is negative i.e. ($NPV < 0$)

NPV Calculation

$$\text{NPV} = \sum_{t=1}^n \frac{C_t}{(1 + r_t)^t} - \text{Initial investment}$$

Where,

C_t = cash inflow at the end of year t

n = life of the project (years)

r = discount rate or the cost of capital

Example

If project “A” is started with cost of Rs.100,000

Annual total cash inflow is Rs.1,20,000

Our cost of capital is 10%

Should we accept or reject to invest in project “A”??

$$\text{NPV} = \frac{C_t}{(1+r)^t} - \text{Initial investment}$$

$$\text{NPV} = \frac{120000}{(1+.10)^1} - 100000$$

$$\text{NPV} = 109090 - 100000 = 9090$$

SO NPV is positive and project is

accepted

2. Net Present Value

Merits

1. It recognizes the time value of money.
2. It considers the total benefits arising out of the proposal.
3. It is the best method for the selection of mutually exclusive projects.
4. It helps to achieve the maximization of shareholders' wealth.

Demerits

1. It is difficult to understand and calculate.
2. It needs the discount factors for calculation of present values.

Self Calculation

Exercise 6

From the following information, calculate the net present value of the two project and suggest which of the two projects should be accepted a discount rate of the two.

	Project X	Project Y
Initial Investment	Rs. 20,000	Rs. 30,000
Estimated Life	5 years	5 years
Scrap Value	Rs. 1,000	Rs. 2,000

The profits before depreciation and after taxation (cash flows) are as follows:

	Year 1	Year 2	Year 3	Year 4	Year 5
Project x	Rs. 5,000	Rs. 10,000	Rs. 10,000	Rs. 3,000	Rs. 2,000
Project y	20,000	10,000	5,000	3,000	2,000

Present value factor or cost of capital or interest rate is @ 10% p.a.

Which project is accepted and better ??



Thank
You

Q & A

You have

Questions

We have

Answers