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Accounting Principles

ACCOUNTING PRINCIPLES

Eighth Edition

Prepared by
Dan R. Ward
Suzanne P. Ward
University of Louisiana at Lafayette

CHAPTER 26

INCREMENTAL ANALYSIS AND CAPITAL BUDGETING

Accounting Principles, Eighth Edition

Study Objectives

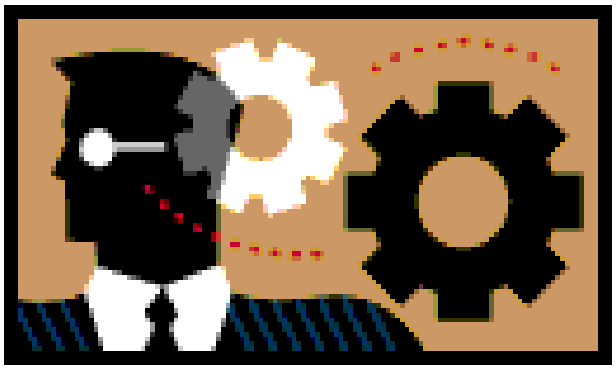
1. Indicate the steps in management's decision-making process.
2. Describe the concept of incremental analysis.
3. Identify the relevant costs in accepting an order at a special price.
4. Identify the relevant costs in a make-or-buy decision.
5. Give the decision rule for whether to sell or process materials.

Study Objectives – Continued

6. Identify the factors to consider in retaining or replacing equipment.
7. Explain the relevant factors in whether to eliminate an unprofitable segment.
8. Determine which products to make and sell when resources are limited.
9. Contrast annual rate of return and cash payback in capital budgeting.
10. Distinguish between the net present value and internal rate of return methods.

Preview of Chapter

- An important purpose of management accounting is to provide managers with relevant information for decision making.
- Considers uses of incremental analysis and capital budgeting in management's decision making process



Incremental Analysis and Capital Budgeting

Incremental Analysis

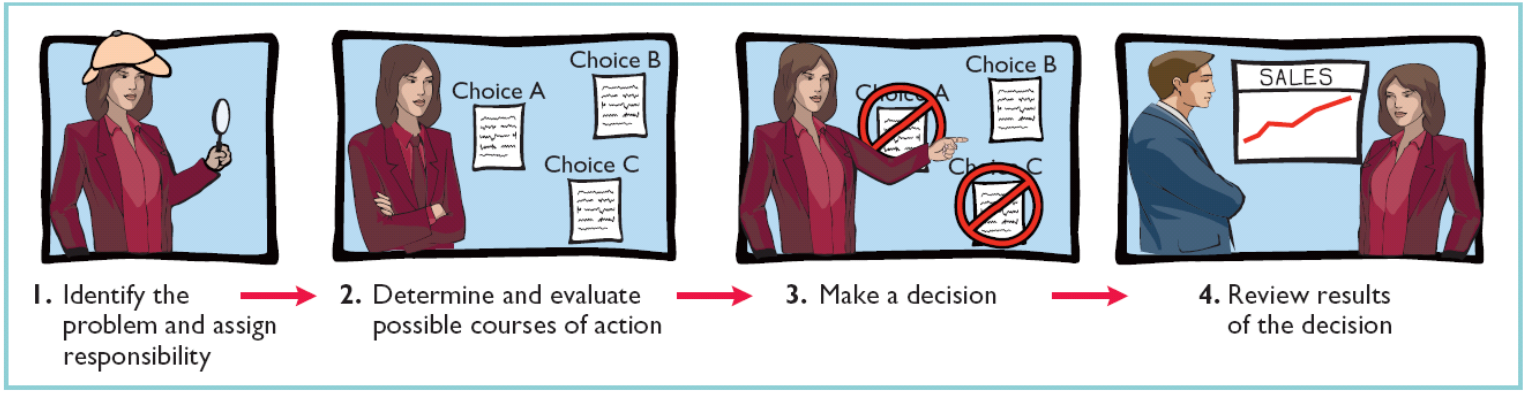
- Management's decision-making process
- How incremental analysis works
- Types of incremental analysis

Capital Budgeting

- Process for evaluation
- Annual rate of return
- Cash payback
- Discounted cash flow

Management's Decision-Making Process

- Important management function
- Does not always follow a set pattern
- Decisions vary in scope, urgency, and importance
- Steps usually involved in process include:



LO 1: Identify the steps in management's decision-making process.

Management's Decision-Making Process

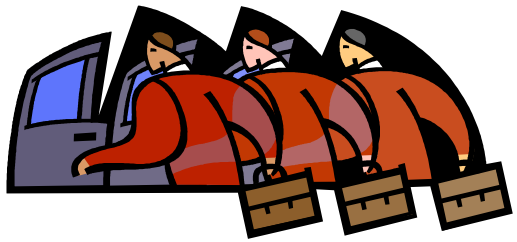
- Considers both financial and non-financial information
- ***Financial information*** includes revenues and costs as well as their effect on overall profitability
- ***Non-financial information*** includes effect on employee turnover, the environment, or overall company image

LO 1: Identify the steps in management's decision-making process.

Management's Decision-Making Process

Incremental Analysis Approach

- Decisions involve a ***choice*** among alternative actions
- Financial data relevant to a decision are the ***data that vary in the future among alternatives***
  - Both costs and revenues may vary *or*
  - Only revenues may vary *or*
  - Only costs may vary



LO 2: Describe the concept of incremental analysis.

Management's Decision-Making Process

Incremental Analysis

- Process used to identify the financial data that change under alternative courses of action
- Identifies probable effects of decisions on future earnings
- Also called *differential analysis* because it focuses on differences

LO 2: Describe the concept of incremental analysis.

How Incremental Analysis Works

Basic Example

Incremental Analysis.xls

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	A	B	C	D
1		Alternative A	Alternative B	Net Income Increase (Decrease)
2	Revenues	$125,000	$110,000	$ (15,000)
3	Costs	100,000	80,000	20,000
4	Net income	$ 25,000	$ 30,000	$ 5,000
5				

Comparison of Alternative B with Alternative A:

- Incremental revenue is $15,000 ***less*** under Alternative B
- Incremental ***cost savings*** of $20,000 is realized
- Alternative B produces ***$5,000 more net income***

LO 2: Describe the concept of incremental analysis.

How Incremental Analysis Works

- Sometimes involves changes that seem contrary to intuition
- Variable costs sometimes **do not change** under alternatives
- Fixed costs sometimes **change** between alternatives
- Incremental analysis **not** the same as CVP analysis

LO 2: Describe the concept of incremental analysis.

Let's Review

Incremental analysis is the process of identifying the financial data that

a. Do not change under alternative courses of action.

b. Change under alternative courses of action.

c. Are mixed under alternative courses of action.

d. None of the above.

LO 2: Describe the concept of incremental analysis.

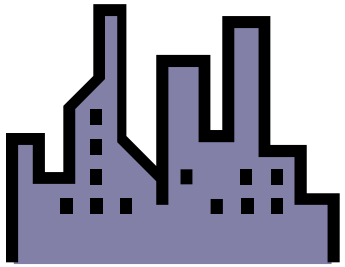
Types of Incremental Analysis

- Accept an order at a special price
- Make or buy
- Sell products or process further
- Retain or replace equipment
- Eliminate an unprofitable business segment
- Allocate limited resources

LO 2: Describe the concept of incremental analysis.

Accept an Order at a Special Price

- Obtain additional business by making a major price concession to a specific customer
- Assumes that sales of products in other markets are not affected by special order
- Assumes that company is not operating at full capacity



LO 3: Identify the relevant costs in accepting an order at a special price.

Accept an Order at a Special Price

Example

- Customer offers to buy a special order of 2,000 units at $11 per unit
  - No effect on normal sales
  - No effect on plant capacity; currently operating at 80% which is 100,000 units
  - Current variable manufacturing cost = $8 per unit
  - Current fixed manufacturing costs = $400,000 or $4 per unit
  - Normal selling price = $20 per unit
- Based strictly on total cost of $12 per unit ($8 + $4), ***reject*** offer as cost exceeds selling price of $11

LO 3: Identify the relevant costs in accepting an order at a special price.

Accept an Order at a Special Price

Example - Continued

- Fixed costs do not change since within existing capacity – thus ***fixed costs are not relevant***
- Variable manufacturing costs and expected revenues change – thus ***both are relevant to the decision***

Accepting an order at a special price.xls

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	A	B	C	D
1		Reject Order	Accept Order	Net Income Increase (Decrease)
2	Revenues	$0	$22,000	$ 22,000
3	Costs	0	16,000	(16,000)
4	Net income	$0	$ 6,000	$ 6,000
5				

Decision: Accept the offer; Income increases by $6,000

LO 3: Identify the relevant costs in accepting an order at a special price.

Make or Buy

Must decide whether to make the component parts or to buy them from others

Example:

The following costs are incurred to make 25,000 switches:

Direct materials	$ 50,000
Direct labor	75,000
Variable manufacturing overhead	40,000
Fixed manufacturing overhead	60,000
Total manufacturing costs	$225,000
Total cost per unit ($225,000 ÷ 25,000)	**$9.00**

Alternatively, the switches can be purchased for $8 per switch ($200,000)

Eliminates all variable costs of making switches

Eliminates $10,000 of fixed costs; however, $50,000 remain

LO 4: Identify the relevant costs in a make-or-buy decision.

Make or Buy

Example - Continued

- Total manufacturing cost is $1 higher than purchase price
- Must absorb at least $50,000 of fixed costs under either option

Incremental Analysis - Make or buy.xls

File Edit View Insert Format Tools Data Window Help

	A	B	C	D
1		Make	Buy	Net Income Increase (Decrease)
2	Direct materials	$ 50,000	$ 0	$ 50,000
3	Direct labor	75,000	0	75,000
4	Variable manufacturing costs	40,000	0	40,000
5	Fixed manufacturing costs	60,000	50,000	10,000
6	Purchase price (25,000 × $8)	0	200,000	(200,000)
7	Total annual cost	$225,000	$250,000	$ (25,000)
8				

Decision: Continue to make switches as purchasing adds $25,000 to cost

LO 4: Identify the relevant costs in a make-or-buy decision.

Make or Buy

Opportunity Cost

the ***potential benefit*** that may be obtained from following an alternative course of action

must be considered in incremental analysis

LO 4: Identify the relevant costs in a make-or-buy decision.

Make or Buy

Example – Continued

- Assume that buying the switches allows the company to use the released capacity to earned $28,000 in additional income
- The $28,000 lost income is an additional cost of making the switches – *an opportunity cost*

Incremental Analysis - Make or buy with opportunity cost.xls

File Edit View Insert Format Tools Data Window Help

	A	B	C	D
1		Make	Buy	Net Income Increase (Decrease)
2	Total annual cost	$225,000	$250,000	$(25,000)
3	Opportunity cost	28,000	0	28,000
4	Total cost	$253,000	$250,000	$ 3,000
5				

Decision: Buy the switches as company is $3,000 better off

LO 4: Identify the relevant costs in a make-or-buy decision.

Let's Review

In a make-or-buy decision, relevant costs are:

a. Manufacturing costs that will be saved.

b. The purchase price of the units.

c. Opportunity costs.

d. All of the above.

LO 4: Identify the relevant costs in a make-or-buy decision.

Sell or Process Further

- May have option to sell product at a given point in production or to process further and sell at a higher price

- ***Decision Rule:***

  Process further as long as the incremental revenue from such processing exceeds the incremental processing costs

LO 5: Give the decision rule for whether to sell or process materials further.

Sell or Process Further

Example:

- Costs to manufacture one unfinished table:

Direct materials	$ 15
Direct labor	$ 10
Variable manufacturing overhead	$ 6
Fixed manufacturing overhead	$ 4
Manufacturing cost per unit	**$35**

- Selling price of unfinished unit is $50
- Used capacity used to finish tables to sell for $60 per table
- Relevant unit costs of finishing table:
  - Direct materials increase $2
  - Direct labor increase $4
  - Variable overhead increase $2.40 (60% of direct labor)
  - No change in fixed overhead

LO 5: Give the decision rule for whether to sell or process materials further.

Sell or Process Further

Example – Continued

Incremental Analysis - Sell or process further.xls

File Edit View Insert Format Tools Data Window Help

	A	B	C	D
1		Sell	Process Further	Net Income Increase (Decrease)
2	Sales per unit	$50.00	$60.00	$10.00
3	Cost per unit			
4	Direct materials	15.00	17.00	(2.00)
5	Direct labor	10.00	14.00	(4.00)
6	Variable manufacturing overhead	6.00	8.40	(2.40)
7	Fixed manufacturing overhead	4.00	4.00	0.00
8	Total	35.00	43.40	(8.40)
9	Net income per unit	$15.00	$16.60	$ 1.60
10				

Decision: Process further

Incremental revenue ($10) exceeds incremental processing costs ($8.40); income increases $1.60 per unit

LO 5: Give the decision rule for whether to sell or process materials further.

Retain or Replace Equipment

Example:

- Assessment of replacement of factory machine:

	Old Machine	New Machine
Book Value	$ 40,000	
Cost		$ 120,000
Remaining useful life	four years	four years
Salvage value	-0-	-0-

- Variable manufacturing costs decrease from $160,000 to $125,000 if new machine purchased

LO 6: Identify the factors to consider in retaining or replacing equipment.

Retain or Replace Equipment

Example – Continued

Incremental Analysis - Retain or replace equipment.xls

File Edit View Insert Format Tools Data Window Help

	A	B	C	D	E	F
1		Retain Equipment		Replace Equipment		Net Income Increase (Decrease)
2	Variable manufacturing costs	$640,000	[a]	$500,000	[b]	$140,000
3	New machine cost			120,000		(120,000)
4	Total	$640,000		$620,000		$ 20,000
5						
6	[a](4 years × $160,000)					
7	[b](4 years × $125,000)					
8						

Decision: Replace the Equipment

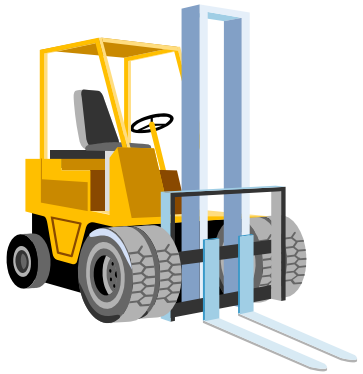
The lower variable costs due to replacement more than offset the cost of the new equipment

LO 6: Identify the factors to consider in retaining or replacing equipment.

Retain or Replace Equipment

Additional Considerations

- The book value of old machine does not affect the decision.
  - Book value is a sunk cost.
  - Costs which cannot be changed by future decisions (sunk cost) are not relevant in incremental analysis.



- However, any trade-in allowance or cash disposal value of the existing asset is relevant.

LO 6: Identify the factors to consider in retaining or replacing equipment.

Let's Review

The decision rule in a sell-or-process-further decision is:

Process further as long as the incremental revenue from processing exceeds:

a. Incremental processing costs.
b. Variable processing costs.
c. Fixed processing costs.
d. No correct answer is given.

LO 5: Give the decision rule for whether to sell or process materials further.

Eliminate an Unprofitable Segment

- Key: ***Focus on Relevant Costs***
- Consider effect on related product lines
- Fixed costs allocated to the unprofitable segment ***must be absorbed*** by the other segments
- Net income may ***decrease*** when an unprofitable segment is eliminated
- Decision Rule:

Retain the segment unless fixed costs eliminated exceed contribution margin lost

LO 7: Explain the relevant factors in whether to eliminate an unprofitable segment.

Eliminate an Unprofitable Segment

Example:

- Martina Company manufactures three models of tennis rackets:
  - Profitable lines: Pro and Master
  - Unprofitable line: Champ
- Condensed Income Statement data:

	Pro	Master	Champ	Total
Sales	$800,000	$300,000	**$100,000**	$1,200,000
Variable expenses	520,000	210,000	**90,000**	820,000
Contribution margin	280,000	90,000	**10,000**	380,000
Fixed expenses	80,000	50,000	**30,000**	160,000
Net income	$200,000	$ 40,000	**$(20,000)**	$ 220,000

Should Champ be eliminated?

LO 7: Explain the relevant factors in whether to eliminate an unprofitable segment.

Eliminate an Unprofitable Segment

Example – Continued

- If Champ is eliminated, allocate its $30,000 fixed costs:

  2/3 to Pro and 1/3 to Master

- Revised Income Statement data:

	Pro	Master	Total
Sales	$800,000	$300,000	$1,100,000
Variable expenses	520,000	210,000	730,000
Contribution margin	280,000	90,000	370,000
Fixed expenses	**100,000**	**60,000**	160,000
Net income	$180,000	$ 30,000	**$ 210,000**

- Total income has ***decreased*** by $10,000

LO 7: Explain the relevant factors in whether to eliminate an unprofitable segment.

Eliminate an Unprofitable Segment

Example – Continued

- Incremental analysis of Champ provided the same results: ***Do Not Eliminate Champ***

Incremental Analysis - Eliminating an unprofitable segment.xls

File Edit View Insert Format Tools Data Window Help

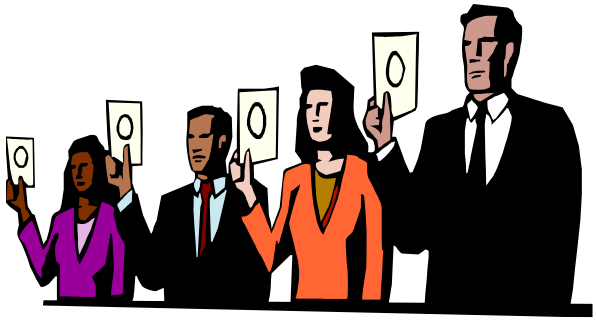
	A	B	C	D
1		Continue	Eliminate	Net Income Increase (Decrease)
2	Sales	$100,000	$ 0	$(100,000)
3	Variable costs	90,000	0	90,000
4	Contribution margin	10,000	0	(10,000)
5	Fixed costs	30,000	30,000	0
6	Net income	$ (20,000)	$(30,000)	$ (10,000)
7				

- Decrease in net income is due to Champ's contribution margin ($10,000) that ***will not*** be realized if the segment is discontinued.

LO 7: Explain the relevant factors in whether to eliminate an unprofitable segment.

Allocate Limited Resources

- **Resources are always limited**
  - Floor space for a retail firm
  - Raw materials, direct labor hours, or machine capacity for a manufacturing firm



- Management must decide ***which products to make and sell to maximize net income***

LO 8: Determine which products to make and sell when resources are limited.

Allocate Limited Resources

Example:

- Collins Company manufactures deluxe and standard pen and pencil sets

- Limiting resource: 3,600 machine hours per month

	Deluxe Sets	Standard Sets
Contribution margin per unit	$8	$6
Machine hours required	0.4	0.2

- Deluxe set has higher contribution margin: $8
- Standard set takes fewer machine hours per unit

LO 8: Determine which products to make and sell when resources are limited.

Allocate Limited Resources

Example: - Continued

- Must compute *contribution margin per unit of limited resource*

	Deluxe Sets	Standard Sets
Contribution margin per unit (a)	$8	$6
Machine hours required (b)	0.4	0.2
Contribution margin per unit of limited resource [(a) ÷ (b)]	**$20**	**$30**

- Standard sets have higher contribution margin per unit of limited resources

Decision: *Shift sales mix to standard sets or increase machine capacity*

LO 8: Determine which products to make and sell when resources are limited.

Allocate Limited Resources

Example: - Continued

- Alternative: Increase machine capacity from 3,600 to 4,200 machine hours

	Produce Deluxe Sets	Produce Standard Sets
Machine hours (**a**)	600	600
Contribution margin per unit of limited resource (**b**)	$20	$30
Contribution margin [(a) × (b)]	**$12,000**	**$18,000**

- To maximize net income, all the additional 600 hours should be used to produce standard sets

LO 8: Determine which products to make and sell when resources are limited.

Let's Review

If an unprofitable segment is eliminated:

a. Net income will always increase.

b. Variable expenses of the eliminated segment will have to be absorbed by other segments.

c. Fixed expenses allocated to the eliminated segment will have to be absorbed by other segments.

d. Net income will always decrease.

LO 7: Explain the relevant factors in whether to eliminate an unprofitable segment.

Capital Budgeting

- The process of making capital expenditure decisions in business is known as

  Capital Budgeting

- The amount of possible capital expenditures usually exceeds the funds available for such expenditures

- Capital budgeting involves choosing among various capital projects to find the one(s) that will

  Maximize a company's return on investment

Evaluation Process

- Many companies follow a carefully prescribed process in capital budgeting.

- At least once a year:
  - Proposals are requested from each department
  - The capital budgeting committee screens the proposals and submits its findings to the officers of the company
  - Officers select projects and submit list to the board of directors for approval

Evaluation Process

- Providing management with relevant data for capital budgeting decisions requires familiarity with quantitative techniques.

- The most common techniques are:

Annual Rate of Return

Cash Payback

Discounted Cash Flow

Evaluation Process

- These techniques will be illustrated using the following data for Tappan Company:
  - Investment in new equipment: $130,000
  - Useful life of new equipment: 10 years
  - Zero salvage and straight-line depreciation
  - The expected annual revenues and costs of the new product that will be produced from the investment are:

Sales		$200,000
Less: Costs and expenses		
Manufacturing costs (exclusive of depreciation)	$145,000	
Depreciation expenses ($130,000 ÷ 10)	13,000	
Selling and administrative expenses	22,000	180,000
Income before income taxes		20,000
Income tax expense		7,000
Net income		$ 13,000

Annual Rate of Return

- The annual rate of return technique is based directly on accounting data
- It indicates the profitability of a capital expenditure
- The formula is:

Expected Annual Net Income	÷	Average Investment	=	Annual Rate of Return

- The expected annual net income is from the projected Income Statement

LO 9: Contrast annual rate of return and cash payback in capital budgeting.

Annual Rate of Return

- The average investment is derived from the following formula:

$$\text{Average Investment} = \frac{\text{Original Investment} + \text{Value at End of Useful Life}}{2}$$

- For Tappan Company the average investment is:

[($130,00 + $0) ÷ 2] = $65,000

LO 9: Contrast annual rate of return and cash payback in capital budgeting.

Annual Rate of Return

- The expected rate of return for Tappan Company's investment in new equipment is:

$13,000 ÷ $65,000 = 20%

- The decision rule is:

A project is acceptable if its rate of return is greater than management's minimum rate of return. When choosing among several acceptable projects, the project with the higher rate of return is generally more attractive.

LO 9: Contrast annual rate of return and cash payback in capital budgeting.

Annual Rate of Return

- Principal advantages of the annual rate of return technique:
  - Simplicity of calculations
  - Management's familiarity with accounting terms used in the calculation
- Major limitation of the technique:

  It does not consider the time value of money
- As noted in Appendix C, recognition of the time value of money can make a significant difference between the present and future values of an investment.

LO 9: Contrast annual rate of return and cash payback in capital budgeting.

Cash Payback

- Identifies the time period required to recover the cost of the investment
- Uses the net annual cash flow produced from the investment
- Net annual cash flow can be approximated by taking net income and adding back depreciation
- The formula for computing the cash payback period is:

Cost of Capital Investment	÷	Net Annual Cash Flow	=	Cash Payback Period

LO 9: Contrast annual rate of return and cash payback in capital budgeting.

Cash Payback

Example:

- Tappan Company has net annual cash inflows of $26,000 (Net Income $13,000 + Depreciation $13,000)
- The cash payback period is:

$130,000 ÷ $26,000 = 5 years

LO 9: Contrast annual rate of return and cash payback in capital budgeting.

Cash Payback

Example:

- Assume Tappan Company has uneven net annual cash inflows
- Now the cash payback period is determined when the cumulative net cash flows equal the cost of the investment

Year	Investment	Net Annual Cash Flow	Cumulative Net Cash Flow
0	$300,000		
1		$ 60,000	$ 60,000
2		90,000	150,000
3		90,000	240,000
4		120,000	360,000
5		100,000	460,000

Cash payback period = **3.5 years**

LO 9: Contrast annual rate of return and cash payback in capital budgeting.

Let's Review

Which of the following is **incorrect** about the annual rate of return technique:

a. The calculation is simple.

b. The accounting terms used are familiar to management.

c. The timing of the cash inflows is not considered.

d. The time value of money is considered.

LO 9: Contrast annual rate of return and cash payback in capital budgeting.

Discounted Cash Flow

- Discounted cash flow techniques generally recognized as best approach to making capital budgeting decisions
- Techniques consider both:
  - Estimated total cash inflows, and
  - The time value of money
- Two methods generally used with the discounted cash flow techniques are

Net Present Value Method

Internal Rate of Return Method

LO 10: Distinguish between the net present value and internal rate of return methods.

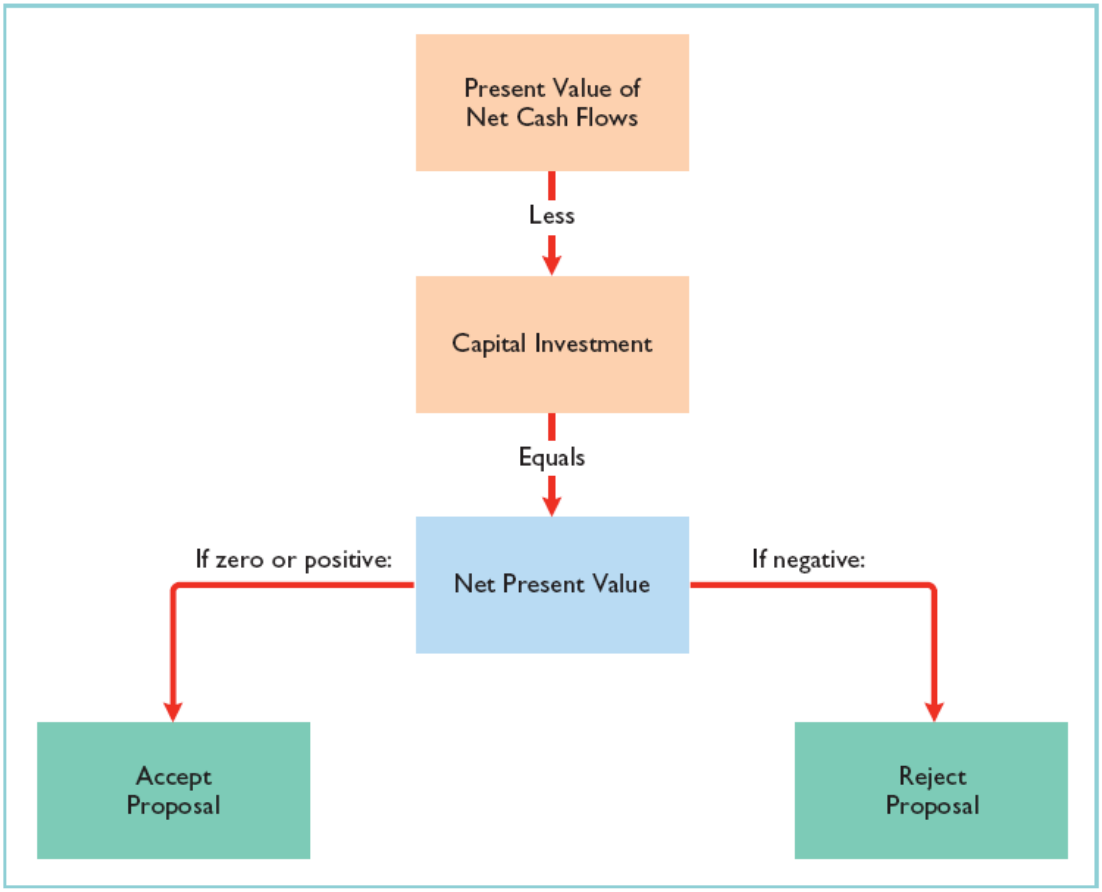
Net Present Value Method

- NPV method compares the **present value of the cash inflows** to the **capital outlay required** by the investment
- The **difference** between the two amounts is referred to as the **net present value**
- The interest rate used to discount the cash flow is the required minimum rate of return
- A proposal is acceptable when the **NPV is zero or positive**
- The higher the positive NPV, the more attractive the investment

LO 10: Distinguish between the net present value and internal rate of return.

Net Present Value Method

Net Present Value Decision Criteria



LO 10: Distinguish between the net present value and internal rate of return methods.

Net Present Value Method

Example: Equal Annual Cash Flows

- Annual cash flows of $26,000 uniform over asset's useful life
- Calculation of present value of annual cash flows (annuity) at 2 different discount rates:

	Present Values at Different Discount Rates	
	12%	15%
Discount factor for 10 periods	5.65022	5.01877
Present value of net annual cash flows:		
$26,000 × 5.65022	$146,906	
$26,000 × 5.01877		$130,488

LO 10: Distinguish between the net present value and internal rate of return methods.

Net Present Value Method

Example: Equal Annual Cash Flows - Continued

- Analysis of proposal using net present values

	12%	15%
Present value of net annual cash flows	$146,906	$130,488
Capital investment	130,000	130,000
Positive (negative) net present value	**$ 16,906**	**$ 488**

- **NPV positive** for both discount rates
- **Accept** proposed capital expenditure at either discount rate

LO 10: Distinguish between the net present value and internal rate of return methods.

Net Present Value Method

Example: Unequal Annual Cash Flows

- Different cash flows each year over asset's useful life; calculation of PV of annual cash flows at 2 different discount rates:

Year	Assumed Net Annual Cash Flows	Discount Factor 12%	Discount Factor 15%	Present Value 12%	Present Value 15%
	(1)	(2)	(3)	(1) × (2)	(1) × (3)
1	$ 36,000	.89286	.86957	$ 32,143	$ 31,305
2	32,000	.79719	.75614	25,510	24,196
3	29,000	.71178	.65752	20,642	19,068
4	27,000	.63552	.57175	17,159	15,437
5	26,000	.56743	.49718	14,753	12,927
6	24,000	.50663	.43233	12,159	10,376
7	23,000	.45235	.37594	10,404	8,647
8	22,000	.40388	.32690	8,885	7,192
9	21,000	.36061	.28426	7,573	5,969
10	20,000	.32197	.24719	6,439	4,944
	$260,000			$155,667	$140,061

LO 10: Distinguish between the net present value and internal rate of return methods.

Net Present Value Method

Example: Unequal Annual Cash Flows - Continued

- Analysis of proposal using net present values

	12%	15%
Present value of net annual cash flows	$155,667	$140,061
Capital investment	130,000	130,000
Positive (negative) net present value	**$ 25,667**	**$ 10,061**

- **NPV positive** for both discount rates
- **Accept** proposed capital expenditure at either discount rate

LO 10: Distinguish between the net present value and internal rate of return methods.

Internal Rate of Return Method

- IRR method finds the interest yield of the potential investment
- IRR – rate that will cause the PV of the proposed capital expenditure to ***equal*** the PV of the expected annual cash inflows
- Two steps in method
  1. Compute the interval rate of return factor
  2. Use the factor and the PV of an annuity of 1 table to find the IRR.

LO 10: Distinguish between the net present value and internal rate of return methods.

Net Present Value Method

Example:

- **Step 1:** The formula for computing the IRR factor:

Capital Investment	÷	Net Annual Cash Flows	=	Internal Rate of Return Factor

- IRR factor for Tappan Company, assuming equal annual cash inflows:

$130,000 ÷ $26,000 = 5.0

LO 10: Distinguish between the net present value and internal rate of return methods.

Net Present Value Method

Example - Continued

- **Step 2:** IRR is the discount factor closest to the IRR factor for the time period covered by the annual cash flows.

TABLE 2
PRESENT VALUE OF AN ANNUITY OF 1

(*n*) Periods	5%	6%	8%	9%	10%	11%	12%	15%
10	7.72173	7.36009	6.71008	6.41766	6.14457	5.88923	5.65022	**5.01877**

- Closest discount factor to 5.0 is 5.01877; thus IRR is approximately 15%

LO 10: Distinguish between the net present value and internal rate of return methods.

Internal Rate of Return Method

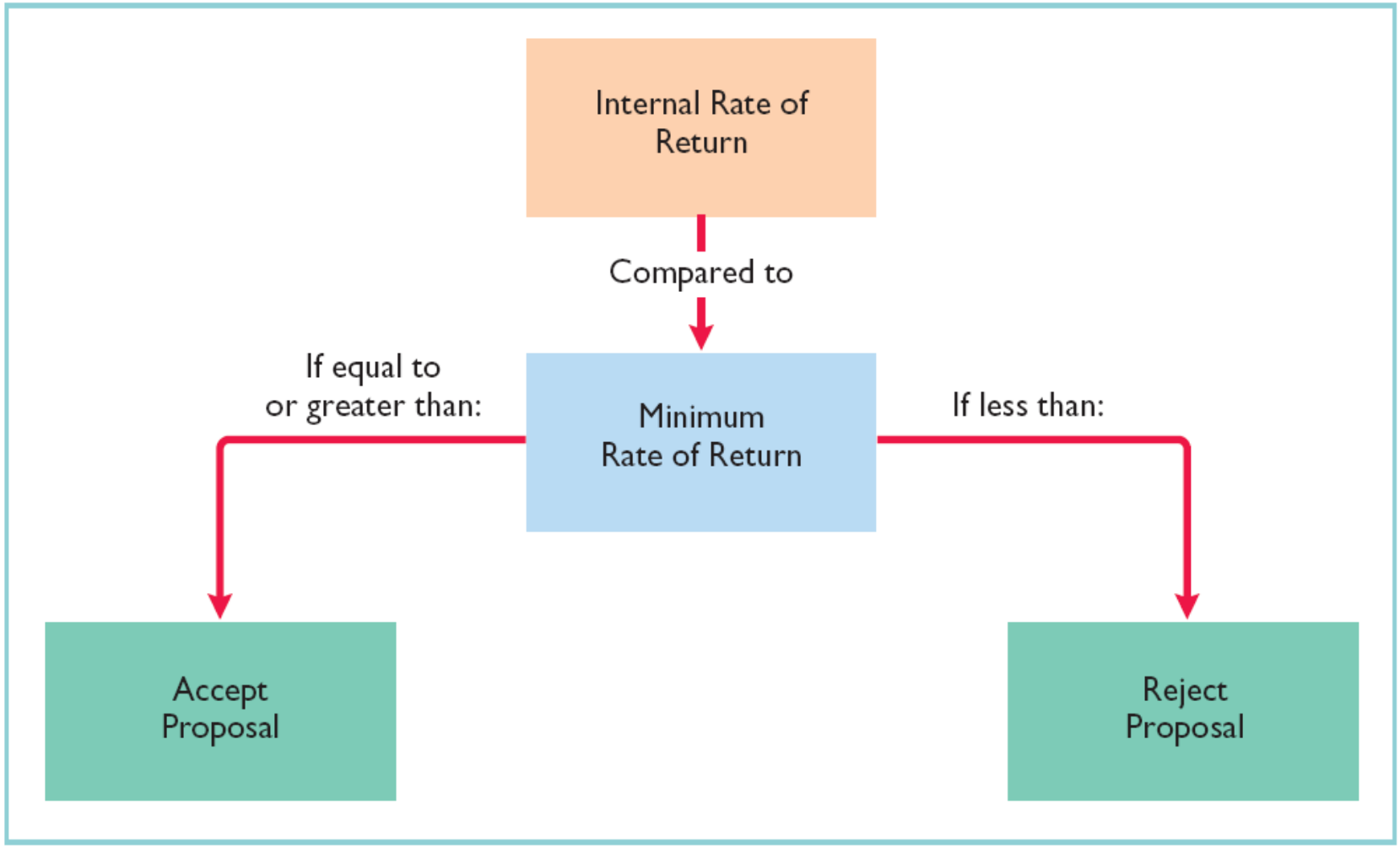
- Compare IRR to management's required minimum rate of return
- **Decision Rule:**

  Accept the project when the IRR is equal to or greater than the required rate of return.

- Assuming a minimum rate of return for Tappan of 10%, project is accepted since IRR of 15% is greater than the required rate.

LO 10: Distinguish between the net present value and internal rate of return methods.

Internal Rate of Return Method



LO 10: Distinguish between the net present value and internal rate of return methods.

Comparison of Discounted Cash Flow Methods

Item	Net Present Value	Internal Rate of Return
1. Objective	Compute net present value (a dollar amount).	Compute internal rate of return (a percentage).
2. Decision rule	If net present value is zero or positive, accept the proposal. If net present value is negative, reject the proposal.	If internal rate of return is equal to or greater than the minimum required rate of return, accept the proposal. If internal rate of return is less than the minimum rate, reject the proposal.

LO 10: Distinguish between the net present value and internal rate of return methods.

Let's Review

A positive net present value means that the:

a. Project's rate of return is less than the cutoff rate.

b. Project's rate of return exceeds the required rate of return.

c. Project's rate of return equals the required rate of return.

d. Project is unacceptable.

LO 10: Distinguish between the net present value and internal rate of return methods.

Chapter Review - Brief Exercise 26-9

Adler Company is considering purchasing new equipment for $400,000. It is expected that the equipment will produce annual net income of $10,000 over its 10-year useful life. Annual depreciation will be $40,000.

Compute the payback period.

Chapter Review - Brief Exercise 26-9

First, calculate net annual cash inflows:

Net income + depreciation

$10,000 + $40,000 = $50,000

Second, divide capital investment by annual cash flows

$400,000 ÷ $50,000 = 8 years

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