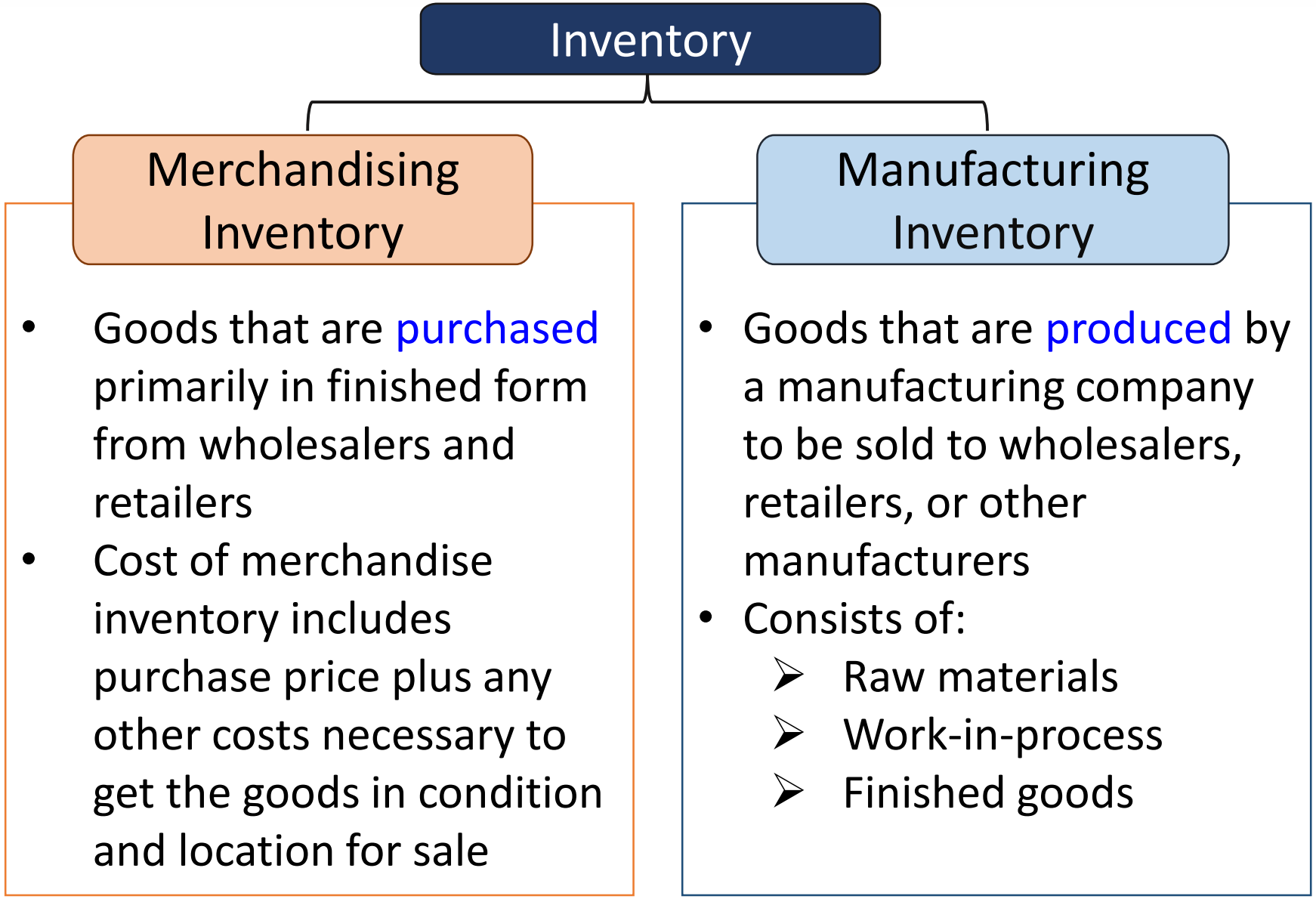
Types of Inventory



Inventory for a manufacturer consists of:

Raw materials

- Represent the cost of components purchased from other manufacturers that will become part of the finished product
- **Example:** Computer chips and memory modules that will go into computers produced by Dell, Inc.

Work-in-process

- Refers to the products that are not yet complete
- The cost of work in process includes:

The cost of raw materials	The cost of labor that can be directly traced	Manufacturing overhead

- **Example:** Partially completed components in the assembly lines of Dell's Texas facility

Finished goods

- Consists of costs that have accumulated in work in process after the manufacturing process is completed
- **Example:** Computers produced by Dell, Inc., that are intended for sale to customers

Illustration: Cost of Goods Sold

The Lothridge Wholesale Beverage Company purchases soft drinks from producers and then sells them to retailers. The company begins 2016 with merchandise inventory of $120,000 on hand. During 2016, additional merchandise was purchased on account at a cost of $600,000. Sales for the year, all on account, totaled $820,000. Lothridge uses a periodic inventory system. A physical count determined the cost of inventory at the end of the year to be $180,000.

Beginning inventory	+	Net purchases	–	Ending inventory	=	**Cost of goods sold**

Beginning inventory	**$120,000**
Plus: Purchases	**600,000**
Cost of goods available for sale	720,000
Less: Ending inventory	(**180,000**)
Cost of goods sold	$540,000

A Comparison of the Perpetual and Periodic Inventory Systems

Perpetual Inventory Systems	Periodic Inventory Systems
• Cost of goods available for sale is allocated by decreasing inventory and increasing cost of goods sold each time goods are sold	• Allocates cost of goods available for sale between ending inventory and cost of goods sold at the end of the period
• Facilitate the preparation of interim financial statements by providing fairly accurate information without the necessity of a physical count of inventory	• Requires a physical count before ending inventory and cost of goods sold can be determined. This makes the preparation of interim financial statements more costly.
• More expensive to implement	• Less costly to implement
• Involves the tracking of both inventory quantities and costs	• Constantly monitor only inventory quantities

Illustration: Inventory Transactions—Perpetual and Periodic Systems (continued)

$ in 000s

Perpetual System			Periodic System		
Purchases					
Inventory	588		Purchases	588	
Accounts payable		588	Accounts payable		588
Freight					
Inventory	16		Freight-in	16	
Cash		16	Cash		16
Returns					
Accounts payable	20		Accounts payable	20	
Inventory		20	Purchase returns		20
Sales					
Accounts receivable	830		Accounts receivable	830	
Sales revenue		830	Sales revenue		830
Cost of goods sold	550		No entry		
Inventory		550			

Illustration: Inventory Transactions—Perpetual and Periodic Systems (continued)

$ in 000s

Perpetual System	Periodic System		
End of the period			
No entry	Cost of goods sold	550	
	Inventory (ending)	154	
	Purchase returns	20	
	Inventory (beginning)		120
	Purchases		588
	Freight-in		16

Supporting Schedule: Cost of goods sold

Beginning inventory	$120,000
Plus: Net Purchases ($588–20+16)	584,000
Cost of goods available	704,000
Less: Ending inventory	(154,000)
Cost of goods sold	$550,000

Physical Quantities Included in Inventory

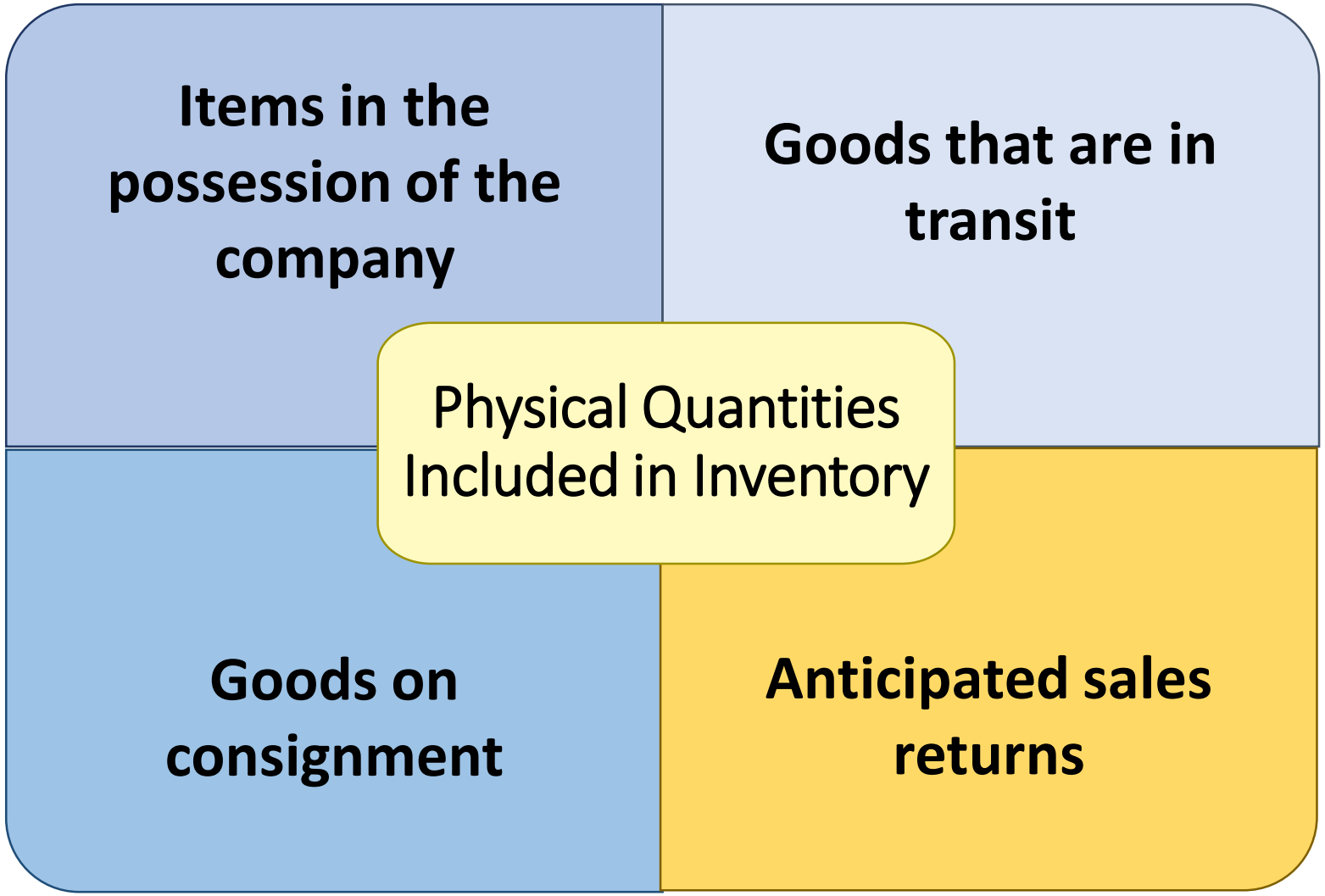


Illustration: Average Cost—Perpetual Inventory System

Date	Purchased	Sold	Balance
Beg. Inv.	4,000 @ $5.50 = $22,000		4,000 @ $5.50 = $22,000
Jan. 10		2,000 @ $5.50 = $ 11,000	2,000 @ $5.50 = $11,000
Jan. 17	1,000 @ $6.00 = $6,000		$11,000 + $6,000 = $17,000 2,000 + 1,000 = 3,000 units
Average cost per unit: $17,000 ÷ 3,000 units = $5.667/units			
Mar. 22	3,000 @ $7.00 = $21,000		$17,000 + $21,000 = $38,000 3,000 + 3,000 = 6,000 units
Average cost per unit: $38,000 ÷ 6,000 units = $6.333/unit			
Apr. 15		1,500 @ $6.333 = $ 9,500	4,500 @ **$6.333** = $28,500
Oct. 15	3,000 @ $7.50 = $22,500		$28,500 + $22,500 = $51,000 4,500 + 3,000 = 7,500 units
Average cost per unit: $51,000 ÷ 7,500 units = $6.80/unit			
Nov. 20		3,000 @ $6.80 = $ 20,400	4,500 @ **$6.80** = **$30,600**
Total cost of goods sold = $40,900			

Illustration: Average Cost—Periodic Inventory System

Beginning inventory (4,000 units @ $5.50)	$ 22,000
Plus: Purchases (7,000 units @ various prices)	49,500
Cost of goods available for sale (11,000 units)	**$ 71,500**

$$\text{Weighted-average unit cost} = \frac{\text{Cost of goods available for sale}}{\text{Quantity available for sale}}$$

$$\text{Weighted-average unit cost} = \frac{\$71{,}500}{11{,}000} = \$6.50$$

Cost of goods sold (6,500 units @ $6.50) =	**$ 42,250**
Ending inventory (4,500 units @ $6.50) =	**$ 29,250**

Illustration: FIFO—Perpetual Inventory System

Date	Purchased	Sold	Balance
Beginning Inventory	4,000 @ $5.50 = $22,000		4,000 @ $5.50 = $22,000
Jan. 10		2,000 @ $5.50 =$ 11,000	2,000 @ $5.50 = $11,000
Jan. 17	1,000 @ $6.00 = $6,000		2,000 @ $5.50 1,000 @ $6.00 } $17,000
Mar. 22	3,000 @ $7.00 = $21,000		2,000 @ $5.50 1,000 @ $6.00 3,000 @ $7.00 } $38,000
Apr. 15		1,500 @ $5.50 = $ 8,250	500 @ $5.50 1,000 @ $6.00 3,000 @ $7.00 } $29,750
Oct. 15	3,000 @ $7.50 = $22,500		500 @ $5.50 1,000 @ $6.00 3,000 @ $7.00 3,000 @ $7.50 } $52,250
Nov. 20		500 @ $6.80 1,000 @ $6.00 1,500 @ $7.00 } = $19,250	1,500 @ $7.00 3,000 @ $7.50 } $33,000
Total cost of goods sold = $38,500			

Illustration: FIFO—Periodic Inventory System

Beginning inventory (4,000 units @ $5.50)	$ 22,000
Plus: Purchases (7,000 units @ various prices)	49,500
Cost of goods available for sale (11,000 units)	$ 71,500
Ending inventory (Determined below)	( )
Cost of goods sold (6,500 units)	**$ 38,500**

Cost of Ending Inventory:

Date of Purchase	Units	Unit Cost	Total Cost
Mar. 22	1,500	$7.00	$10,500
Oct. 15	3,000	7.50	22,500
Total	4,500		**$33,000**

Illustration: LIFO—Perpetual Inventory System

Date	Purchased	Sold	Balance
Beginning Inventory	4,000 @ $5.50 = $22,000		4,000 @ $5.50 = $22,000
Jan. 10		2,000 @ $5.50 =$ 11,000	2,000 @ $5.50 = $11,000
Jan. 17	1,000 @ $6.00 = $6,000		2,000 @ $5.50 1,000 @ $6.00 — $17,000
Mar. 22	3,000 @ $7.00 = $21,000		2,000 @ $5.50 1,000 @ $6.00 3,000 @ $7.00 — $38,000
Apr. 15		1,500 @ $7.00 = $ 10,500	2,000 @ $5.50 1,000 @ $6.00 1,500 @ $7.00 — $27,500
Oct. 15	3,000 @ $7.50 = $22,500		2,000 @ $5.50 1,000 @ $6.00 1,500 @ $7.00 3,000 @ $7.50 — $50,000
Nov. 20		3,000 @ $7.50 = $22,500	2,000 @ $5.50 1,000 @ $6.00 1,500 @ $7.00 — $27,500
Total cost of goods sold = $44,000			

Illustration: LIFO—Periodic Inventory System

Beginning inventory (4,000 units @ $5.50)	$ 22,000
Plus: Purchases (7,000 units @ various prices)	49,500
Cost of goods available for sale (11,000 units)	$ 71,500
Ending inventory (Determined below)	( )
Cost of goods sold (6,500 units)	**$ 46,500**

Cost of Ending Inventory:

Date of Purchase	Units	Unit Cost	Total Cost
Beginning inventory	4,000	$5.50	$22,000
Jan. 17	500	6.00	3,000
Total	4,500		$25,000

The Dollar-Value LIFO Inventory Estimation Technique

Hanes Company adopted the dollar-value LIFO method on January 1, 2016, when the inventory value was $400,000. The 2016 ending inventory valued at year-end costs is $441,000, and the cost index for the year is 1.05 (105%).

Step 3: Convert each layer's base year cost to layer year cost using the cost index for the year it was acquired.

Date	Ending Inventory at Base Year Cost	×	Cost Index	=	Ending Inventory at DVL Cost
1/1/16	$400,000	×	1.00	=	$400,000
2016 layer	20,000	×	1.05	=	21,000
	$420,000				$421,000

Illustration:
Comparison of HTM, TS, and AFS Approaches

	Held-to-Maturity (Htm)	Trading (TS)	Available-for-Sale (AFS)
Purchase bonds at a discount	Investments 700,000 Discount 33,367 Cash 666,633	Same as HTM	Same as HTM
Receive investment revenue	Cash 42,000 Discount 4,664 Invest. income 46,664	Same as HTM	Same as HTM
Adjust to fair value	No entry (unless impaired)	FV adjustment 43,646 Net unrealized gain/loss—I/S 43,646	FV adjustment 43,646 Net unrealized gain/loss—OCI 43,646
Sell bonds for a realized gain	Discount 28,703 Cash 725,000 Investments 700,000 Gain 53,703	Recognize gain or loss: Same as HTM Reverse out previously recorded unrealized gain or loss that's no longer unrealized (automatically part of next adjustment to fair value): Net unrealized gain/loss—I/S 43,646 FV adjustment 43,646	Recognize gain or loss: Same as HTM Reverse out previously recorded unrealized gain or loss that's no longer unrealized (automatically part of next adjustment to fair value): Net unrealized gain/loss—OCI 43,646* FV adjustment 43,646

*Reported as a reclassification adjustment in the statement of comprehensive income.

Illustration: Comparison of Fair Value and the Equity Methods

	Fair Value	Equity Method
Purchase equity investment	Investment in Arjent 1,500,000 Cash 1,500,000	Same as Fair Value Method
Recognize proportionate share of investee's net income and any related adjustments	No entry	Investment in Arjent 150,000 Investment revenue 150,000 Investment revenue 30,000 Investment in Arjent 30,000
Adjust investment to reflect changes in fair value from $1,500,000 to $1,450,000	Net unrealized gain/loss* 50,000 FV adjustment 50,000	No entry
Receive dividend	Cash 75,000 Investment revenue 75,000	Cash 75,000 Investment in Arjent 75,000
Sell equity investment	Recognize gain or loss: Cash 1,446,000 Loss (to balance) 54,000 Investment in Arjent 1,500,000	Cash 1,446,000 Loss (to balance) 99,000 Investment in Arjent 1,545,000
	Reverse out previously recorded unrealized gain or loss that's no longer unrealized (automatically part of next adjustment to fair value): FV adjustment 50,000 Net unrealized gain/loss* 50,000	

*Net unrealized holding gains and losses are reported in net income for trading securities and in other comprehensive income for available-for-sale securities.

Illustration: Straight-Line Method

The Hogan Manufacturing Company purchased a machine for $250,000. The company expects the service life of the machine to be five years. During that time, it is expected that the machine will produce 140,000 units. The anticipated residual value is $40,000. The machine was disposed of after five years of use. Actual production during the five years of the asset's life was:

Year	Units Produced
1	24,000
2	36,000
3	46,000
4	8,000
5	16,000
	130,000

$$\text{Straight-line annual depreciation} = \frac{\$250{,}000 - 40{,}000}{5 \text{ years}} = \$42{,}000 \text{ per year}$$

Illustration: Sum-of-the-Years'-Digits Depreciation

The Hogan Manufacturing Company purchased a machine for $250,000. The company expects the service life of the machine to be five years. During that time, it is expected that the machine will produce 140,000 units. The anticipated residual value is $40,000. The machine was disposed of after five years of use. SYD depreciation for each year of the asset's life is as follows:

Year	Depreciable Base	×	Depreciation rate per year	=	Depreciation	Accumulated Depreciation	Book value End of Year
1	$210,000	×	5/15*	=	$ 70,000	$ 70,000	$180,000
2	210,000	×	4/15	=	56,000	126,000	124,000
3	210,000	×	3/15	=	42,000	168,000	82,000
4	210,000	×	2/15	=	28,000	196,000	54,000
5	210,000	×	1/15	=	14,000	210,000	40,000
Totals			15/15		$210,000		

*(n (n+1)) ÷2 = (5 (5+1)) ÷2 = 15

Illustration: Double-Declining-Balance Depreciation

The Hogan Manufacturing Company purchased a machine for $250,000. The company expects the service life of the machine to be five years. During that time, it is expected that the machine will produce 140,000 units. The anticipated residual value is $40,000. The machine was disposed of after five years of use. DDB depreciation for each year of the asset's life is as follows:

1 ÷ 5 = 20% × 2 = 40%

Year	Book value beginning of year	×	Depreciation Rate per year	=	Depreciation	Accumulated Depreciation	Book value End of Year
1	$250,000	×	40%	=	$100,000	$100,000	$150,000
2	150,000		40%		60,000	160,000	90,000
3	90,000		40%		36,000	196,000	54,000
4	54,000				**14,000**	210,000	40,000
5	40,000				—		40,000
Total					$210,000		

Illustration: Activity-Based Depreciation Methods

The Hogan Manufacturing Company purchased a machine for $250,000. The company expects the service life of the machine to be five years. During that time, it is expected that the machine will produce 140,000 units. The anticipated residual value is $40,000. The machine was disposed of after five years of use. Actual production during the five years of the asset's life was:

Year	Units Produced
1	24,000
2	36,000
3	46,000
4	8,000
5	16,000
	130,000

Illustration: Units-of-Production Depreciation

The Hogan Manufacturing Company purchased a machine for $250,000. The company expects the service life of the machine to be five years. During that time, it is expected that the machine will produce 140,000 units. The anticipated residual value is $40,000. The machine was disposed of after five years of use.

$$\text{Depreciation Rate per unit} = \frac{\$250{,}000 - 40{,}000}{140{,}000 \text{ units}} = \textbf{\$1.50} \text{ per unit}$$

Year	Units Produced	×	Depreciation Rate per unit	=	Depreciation	Accumulated Depreciation	Book value End of Year
1	24,000	×		=	$36,000	$ 36,000	$214,000
2	36,000		1.50		54,000	90,000	160,000
3	46,000		1.50		69,000	159,000	91,000
4	8,000		1.50		12,000	171,000	79,000
5	16,000				39,000	210,000	40,000
Totals	130,000				$210,000		

Bank Reconciliation

(Illustration continued)

Step 1: Bank Balance to Corrected Balance	
Balance per bank statement	$34,680
Add: Deposits outstanding	3,985
Deduct: Checks outstanding	(5,536)
Corrected cash balance	$33,129

Step 2: Book Balance to Corrected Balance	
Balance per books	$35,276
Add: Note collected by bank	1,120
Deduct:	
Service charges	(80)
NSF checks	(2,187)
Error—understatement of check	(1,000)
Corrected cash balance	$33,129

Cash and Cash Equivalents

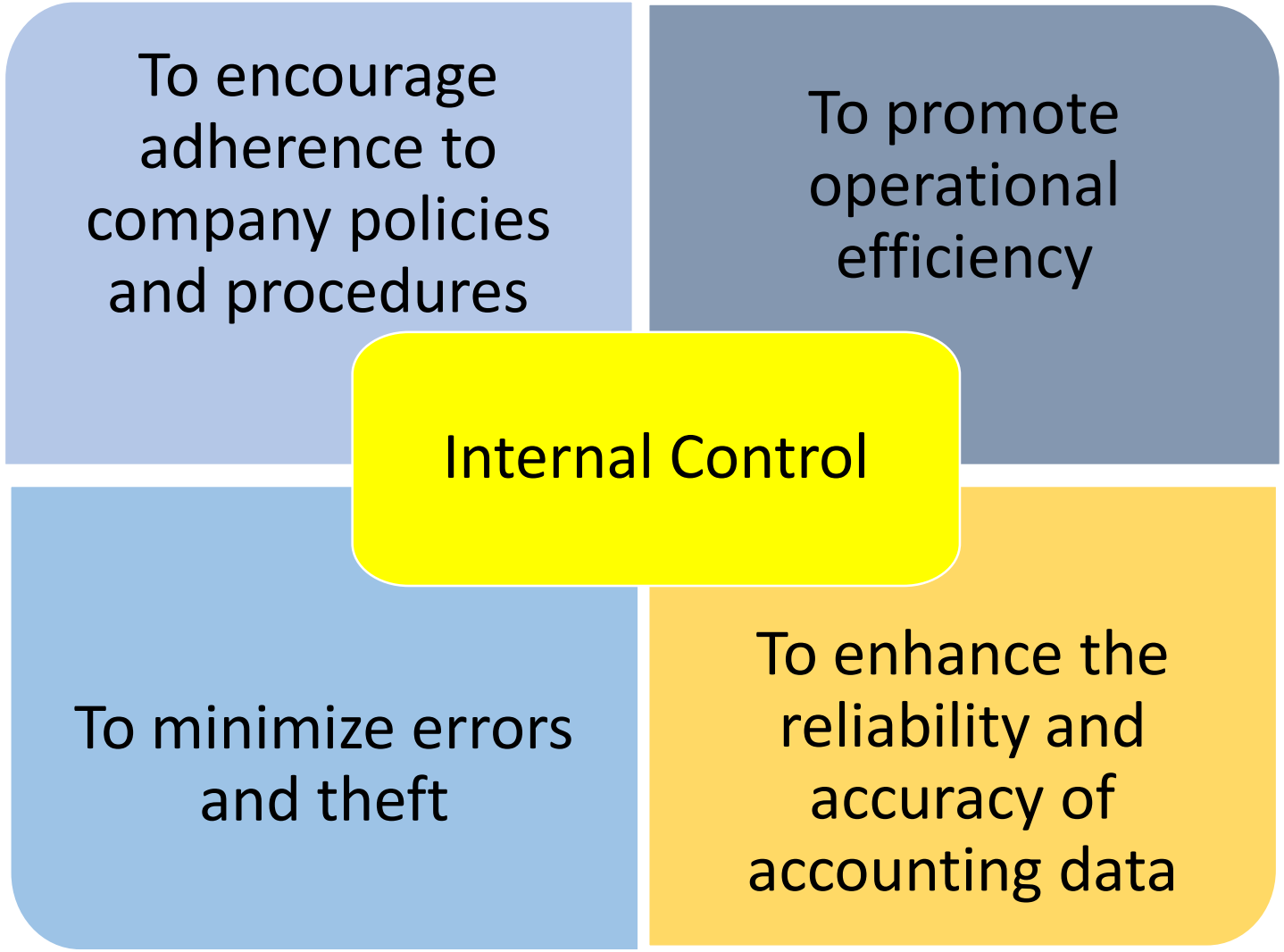
Cash

- Amounts readily available to pay off debt or to use in operations
- **Examples**: Currency and coins, balances in checking accounts

Cash equivalents

- Short-term, highly liquid investments, readily convertible to cash with little risk of loss
- Have a maturity date no longer than three months *from the date of purchase*
- **Examples**: Money market funds, treasury bills, and commercial paper

Internal Control



Trade Discounts and Cash Discounts

Trade Discounts

- A percentage reduction from the list price
- Quantity discounts to large customers

Cash Discounts

- Reductions in the amount to be paid by a credit customer if paid within a specified period of time
- Intended to provide incentive for quick payment

  2/10, n/30 — meaning a **2%** discount if paid within **10** days, otherwise full payment within **30** days

Gross Method vs. Net Method

(Illustration continued)

The Hawthorne Manufacturing Company offers credit customers a 2% cash discount if the sales price is paid within 10 days. Any amounts not paid within 10 days are due in 30 days. These repayment terms are stated as **2/10, n/30**. On October 5, 2016, Hawthorne sold merchandise at a price of $20,000. The customer paid $13,720 ($14,000 less the 2% cash discount) on October 14 and the remaining balance of $6,000 on November 4.

	Gross Method	Net Method
Sales	$20,000	$19,600
Less: Sales discounts	(280)	-0-
Net sales revenue	19,720	19,600
Interest revenue	0	120
Total revenue	$19,720	$19,720

Two Approaches to Estimating Bad Debts

Estimation of Bad Debts

Income statement approach

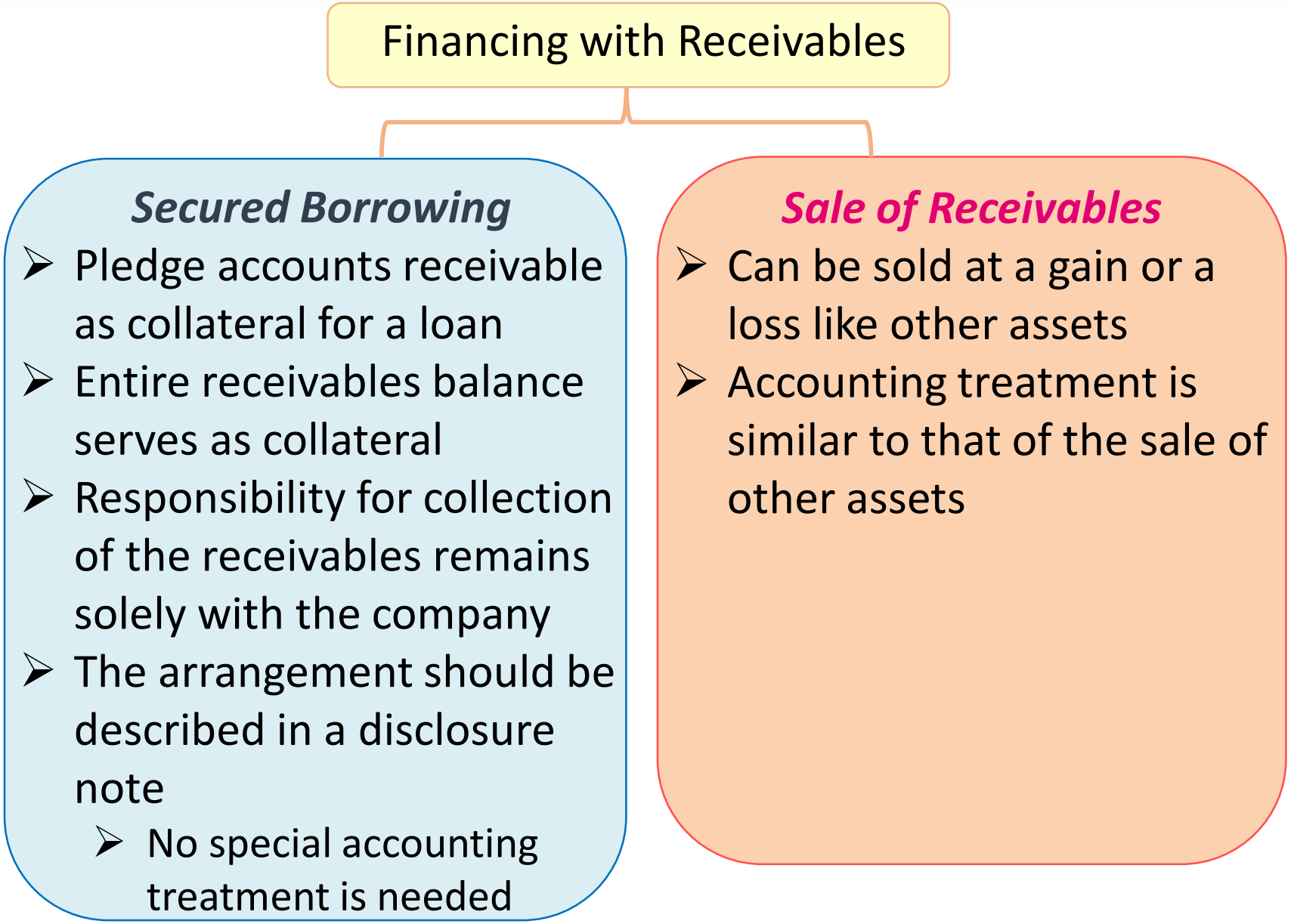
- Estimates bad debt expense as a percentage of each period's net credit sales
- Existing companies use past data to determine this percentage
- New companies use industry averages

Balance sheet approach

- Determines bad debt expense by estimating the net realizable value of accounts receivable
- Estimation done by applying:
  - a percentage to the entire outstanding receivable balance

    or
  - accounts receivable aging schedule

Financing with Receivables



Decision Makers' Perspective:

Receivables Management

- The **receivables turnover ratio** and the related **average collection period** ratios are designed to monitor receivables

$$\text{Receivables turnover ratio} = \frac{\text{Net sales}}{\text{Average accounts receivable (net)}}$$

$$\text{Average collection period} = \frac{365 \text{ days}}{\text{Receivables turnover ratio}}$$

Cash versus Accrual Accounting

Cash Basis Accounting

- Measurement of **cash receipts** and **cash payments** from transactions related to providing goods and service
- Difference is net operating cash flow

Accrual Basis Accounting

- Measurement of **revenues** and **expenses, *regardless of when cash is received or paid***
- Difference is net income or net loss

Converting Cash Basis to Accrual Basis Income

Converting Cash Basis Income to Accrual Basis Income

	Increases	Decreases
Assets	Add	Deduct
Liabilities	Deduct	Add

Profitability Analysis (Illustration 5-25)

Activity ratios		
Asset turnover	=	$\frac{\text{Net sales}}{\text{Average total assets}}$
Receivables turnover	=	$\frac{\text{Net sales}}{\text{Average accounts receivable (net)}}$
Average collection period	=	$\frac{365}{\text{Receivables turnover ratio}}$
Inventory turnover	=	$\frac{\text{Cost of goods sold}}{\text{Average inventory}}$
Average days in inventory	=	$\frac{365}{\text{Inventory turnover ratio}}$
Profitability ratios		
Profit margin on sales	=	$\frac{\text{Net income}}{\text{Net sales}}$
Return on assets	=	$\frac{\text{Net income}}{\text{Average total assets}}$
Return on shareholders' equity	=	$\frac{\text{Net income}}{\text{Average shareholders' equity}}$
Leverage ratio		
Equity multiplier	=	$\frac{\text{Average total assets}}{\text{Average total equity}}$

Recognizing Revenue Over Time According to Percentage of Completion

$$\text{Revenue recognized this period} = \left(\overbrace{\text{Total estimated revenue} \times \text{Percentage completed to date}}^{\text{Cumulative revenue to be recognized to date}}\right) - \text{Revenue recognized in prior periods}$$

$$\text{Fixed-asset turnover ratio} = \frac{\text{Net sales}}{\text{Average fixed assets}}$$

$$\text{Gross profit ratio} = \frac{\text{Gross profit}}{\text{Net sales}}$$

$$\text{Inventory turnover ratio} = \frac{\text{Cost of goods sold}}{\text{Average inventory}}$$

Debt to Equity Ratio

- Measures the degree of risk
- The type of risk measured is the **default risk**
  - It presumably indicates the likelihood a company will default on its obligations

$$\text{Debt to equity ratio} = \frac{\text{Total liabilities}}{\text{Shareholders' equity}}$$

	Coca-Cola	**PepsiCo**
Total liabilities	$56,880	$53,888
Shareholders' equity	32,631	22,765

$$\text{Debt to equity ratio} = \frac{\$56,880}{\$32,631} \qquad \frac{\$53,888}{\$22,765}$$

$$= \qquad 1.74 \qquad 2.37$$

Risk

Rate of Return on Assets

$$\text{Rate of return on assets} = \frac{\text{Net income}}{\text{Total assets}}$$

	Coca-Cola	PepsiCo
Net income	$ 4,463	$ 3,110
Total assets	$89,511	$76,653
Rate of return on assets =	$\frac{\$4,463}{\$89,511}$	$\frac{\$3,110}{\$76,653}$
=	5.0%	4.1%

Rate of Return on Shareholders' Equity

$$\text{Rate of return on shareholders' equity} = \frac{\text{Net income}}{\text{Shareholders' equity}}$$

	Coca-Cola	PepsiCo
Net income	$ 4,463	$ 3,110
Shareholders' equity	$32,631	$22,765

$$\text{Rate of return on shareholders' equity} = \frac{\$4,463}{\$32,631} \quad \frac{\$3,110}{\$22,765}$$

	Coca-Cola	PepsiCo
=	13.7%	13.7%

Times Interest Earned Ratio

$$\text{Times Interest Earned Ratio} = \frac{\text{Net income + Interest + Taxes}}{\text{Interest}}$$

	Coca-Cola	PepsiCo
Net income	$4,463	$3,110
Interest expense	$ 224	$ 377
Tax expense	$1,406	$1,040

$$\text{Times Interest Earned Ratio} = \frac{\$6,093}{\$224} \qquad \frac{\$4527}{\$377}$$

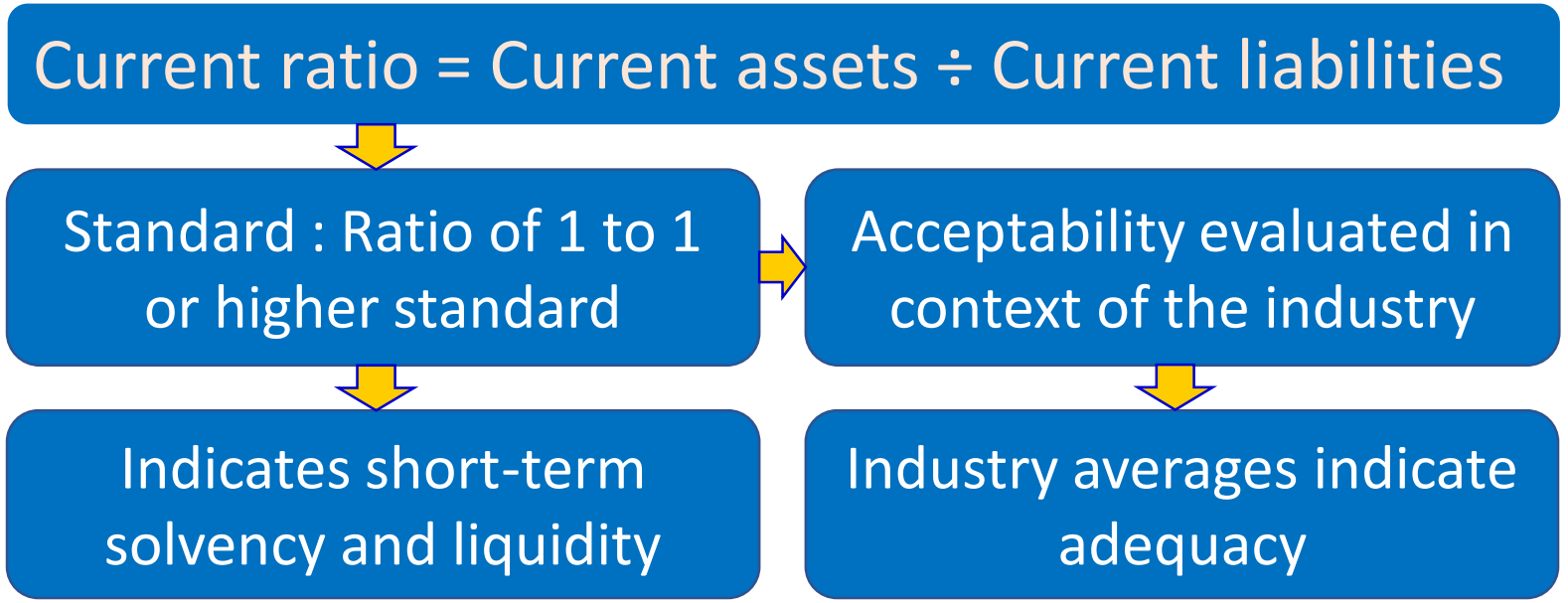
$$= \text{27.2 times} \qquad \text{12 times}$$

$4,463 + $224 + $1,406

$3,110 + $377 + $1,040

Decision Makers' Perspective

- Current liabilities impact liquidity
- Liquidity of a company means
  - A company's cash position
  - Ability to obtain cash in the normal course of business
  - Ability to pay currently maturing debts
  - Current ratio helps in the analysis of liquidity



Decision Makers' Perspective (continued)

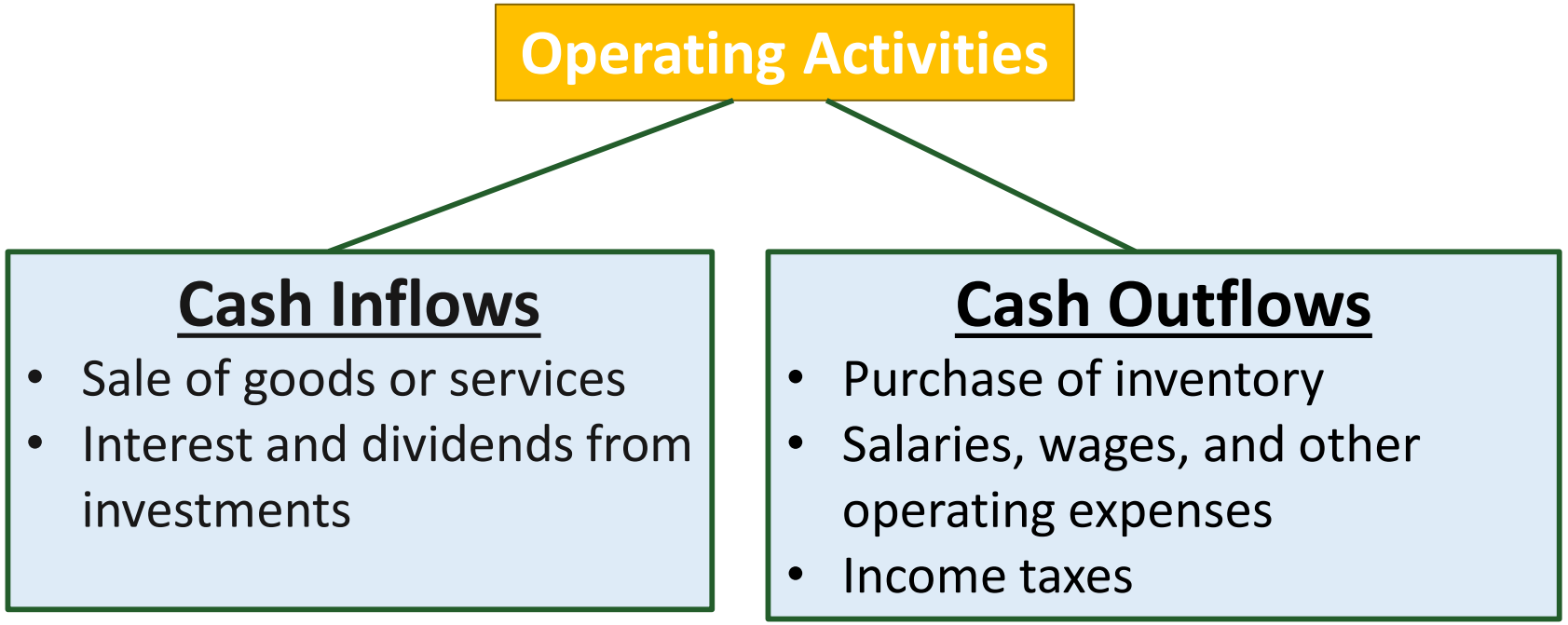
- Acid-test or Quick ratio: conservative measure of assets available to pay current liabilities
- Quick assets = Current assets minus inventories and prepaid expenses

Quick ratio = Quick assets ÷ Current liabilities

Liquidity ratio → Less than → Industry ratio

Operating Activities

- Inflows and outflows of cash that result from activities reported in the income statement



- *Net cash flows from operating activities:* Difference between the inflows and outflows

Cash Flows from Operating Activities;

Direct Method

- Cash flows from operating activities are the **elements of net income**, but reported on a **cash basis**

Cash Flows from Operating Activities:

Cash inflows:	
From customers	$98
From investment revenue	3
Cash outflows:	
To suppliers of goods	(50)
To employees	(11)
For interest	(3)
For insurance	(4)
For income taxes	(11)
Net cash flows from operating activities	$22

Cash Flows from Operating Activities;

Indirect Method

Cash Flows from Operating Activities:	
Net income	**$12**
Adjustments for noncash effects:	
Gain on sale of land	(8)
Depreciation expense	3
Loss on sale of equipment	2
Changes in operating assets and liabilities:	
Increase in accounts receivable	(2)
Decrease in inventory	4
Increase in accounts payable	6
Increase in salaries payable	2
Decrease in discount on bonds payable	2
Decrease in prepaid insurance	3
Decrease in income tax payable	(2)
Net cash flows from operating activities	$22

Investing Activities

- Cash outflows include cash paid for:
  - Purchase of long-lived assets used in the business
  - Purchase of investment securities like stocks and bonds of other entities
  - Loans to other entities
- Cash inflows:
  - The sale of long-lived assets used in the business
  - The sale of investment securities
  - The collection of a nontrade receivable (excluding the collection of interest, which is an operating activity)

Other than those classified as cash equivalents and trading securities

Financing Activities

- Relate to the external financing of the company

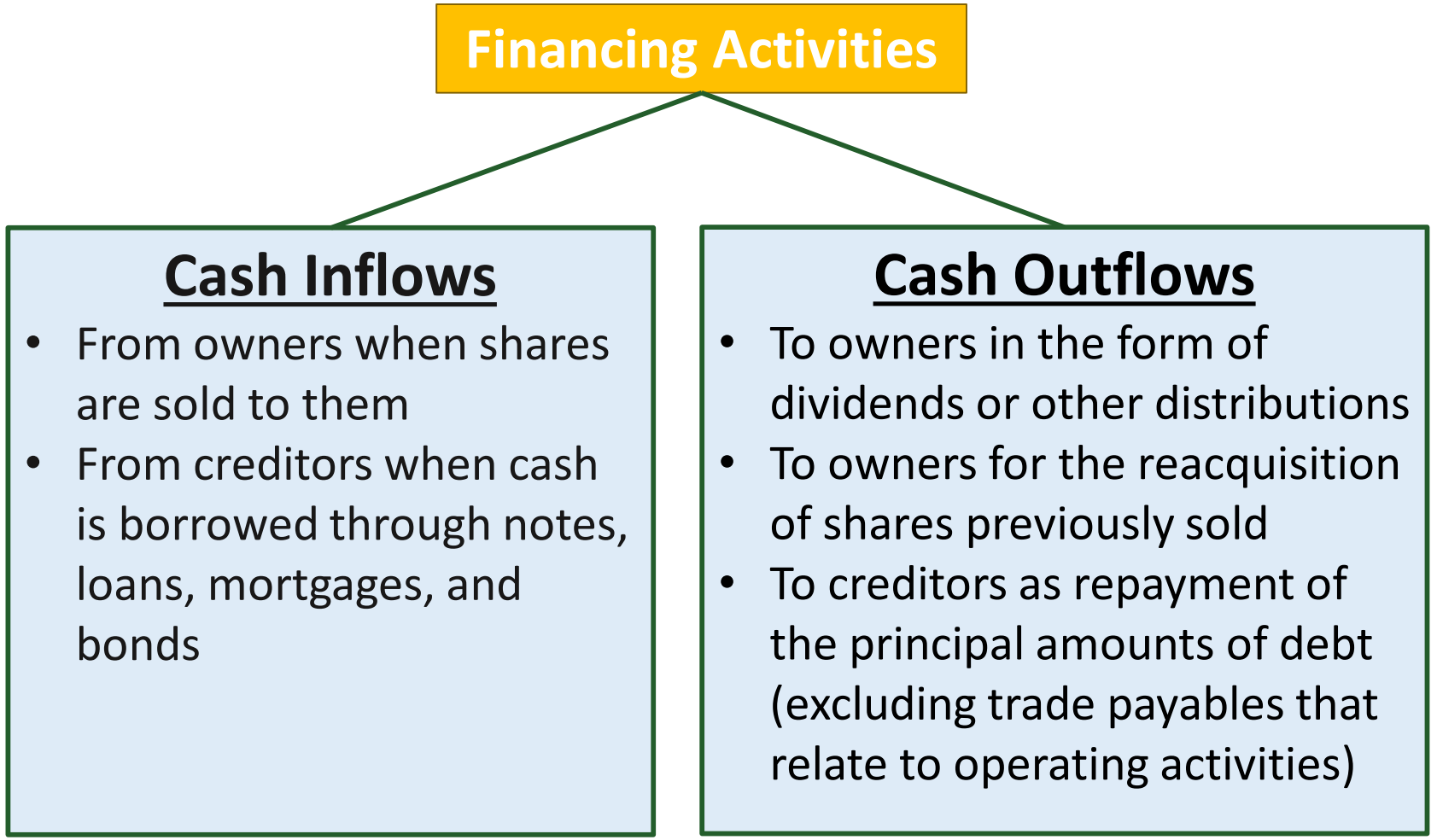


Illustration: Cash Flow Ratios

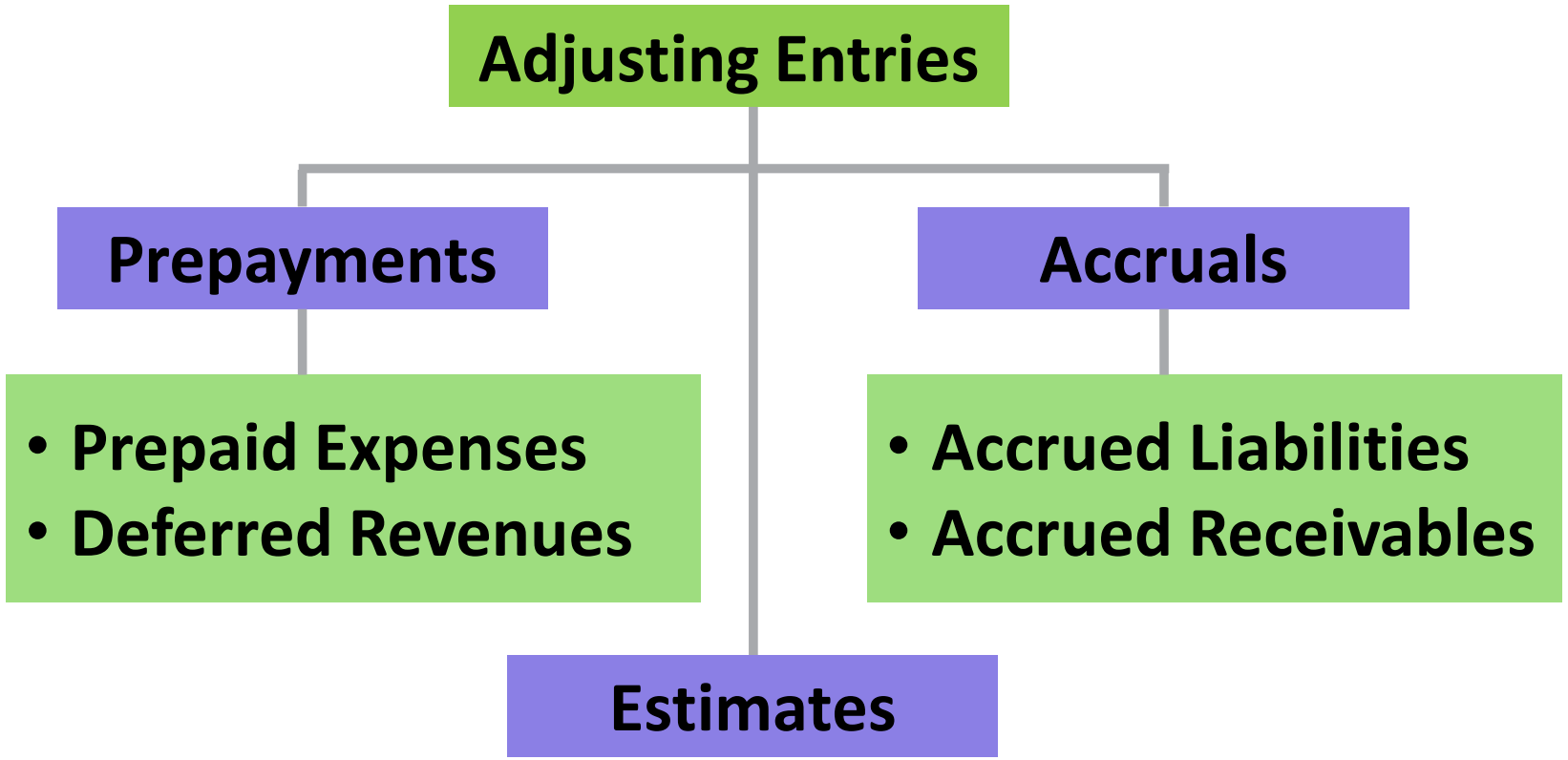
	Calculation	Measures
Performance Ratios		
Cash flow to sales	$\frac{\text{CFFO}}{\text{Net sales}}$	Cash generated by each sales dollar
Cash return on assets	$\frac{\text{CFFO}}{\text{Average total assets}}$	Cash generated from all resources
Cash return on shareholders' equity	$\frac{\text{CFFO}}{\text{Average shareholders' equity}}$	Cash generated from owner-provided resources
Cash to income	$\frac{\text{CFFO}}{\text{Income from continuing operations}}$	Cash-generating ability of continuing operations
Cash flow per share	$\frac{\text{CFFO} - \text{preferred dividends}}{\text{Weighted-average shares}}$	Operating cash flow on a per share basis

Illustration: Cash Flow Ratios (continued)

Sufficiency Ratios

Debt coverage	$\frac{\text{Total liabilities}}{\text{CFFO}}$	Financial risk and financial leverage
Interest coverage	$\frac{\text{CFFO} + \text{interest} + \text{taxes}}{\text{Interest}}$	Ability to satisfy fixed obligations
Reinvestment	$\frac{\text{CFFO}}{\text{Cash outflow for noncurrent assets}}$	Ability to acquire assets with operating cash flows
Debt payment	$\frac{\text{CFFO}}{\text{Cash outflow for LT debt repayment}}$	Ability to pay debts with operating cash flows
Dividend payment	$\frac{\text{CFFO}}{\text{Cash outflow for dividends}}$	Ability to pay dividends with operating cash flows
Investing and financing activity	$\frac{\text{CFFO}}{\text{Cash outflows for investing and financing activities}}$	Ability to acquire assets, pay debts, and make distributions to owners

Step 6: Record and Post Adjusting Entries



Steps of the Accounting Processing Cycle

During the accounting period	Step 1	**Source documents**
	Step 2	**Transaction analysis**
	Step 3	**Journal**
	Step 4	**General ledger**
At the end of the accounting period	Step 5	**Unadjusted trial balance**
	Step 6	**Adjusting entries**
	Step 7	**Adjusted trial balance**
	Step 8	**Financial statements**
At the end of the year	Step 9	**Closing process**
	Step 10	**Post-closing trial balance**

Comparison between PIS and GP method in estimating inventory

Usual Method of Calculation (periodic inventory system)	Gross Profit Method of Calculation
Beginning inventory (from the accounting records)	Beginning inventory (from the accounting records)
+ Net purchases (from the accounting records)	+ Net purchases (from the accounting records)
Goods available for sale	Goods available for sale
– Ending inventory (from a physical count)	– Cost of goods sold (estimated)
Cost of goods sold	Ending inventory (estimated)

Gross Profit Method in estimating inventory

Southern Wholesale Company began 2016 with inventory of **$600,000**, and on March 17 a warehouse fire destroyed the entire inventory. Company records indicate net purchases of **$1,500,000** and net sales of **$2,000,000** prior to the fire. The gross profit ratio in each of the previous three years has been very close to 40%.

Beginning inventory (from records)		$ 600,000
Plus: Net purchases (from records)		1,500,000
Goods available for sale		2,100,000
Less: Cost of goods sold:		
Net sales	$2,000,000 × 40%	
Less: Estimated gross profit of 40%	(800,000)	
Estimated cost of goods sold		(1,200,000)
Estimated ending inventory		$ 900,000

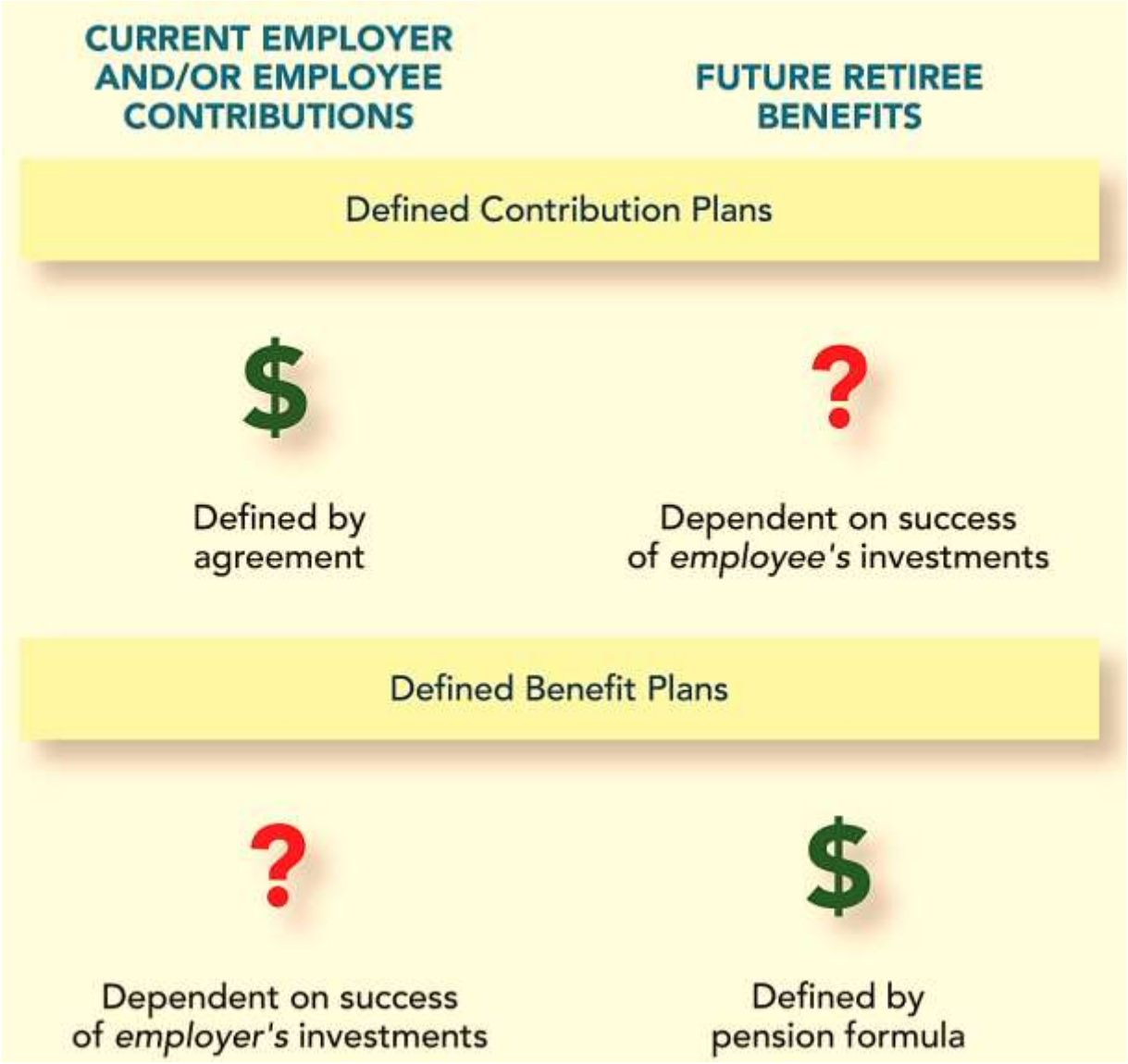
Retail Method in estimating inventory

	Cost	Retail
Beginning inventory	$ 60,000	$100,000
Plus: Net purchases	287,200	460,000
Goods available for sale	$347,200	$560,000
Cost-to-retail percentage: _____ = **62%**		
Less: Net sales		(400,000)
Estimated ending inventory at retail		$160,000
Estimated ending inventory at cost	(99,200)	
Estimated cost of goods sold	$248,000	

Goods available for sale − ending inventory = COGS
(at cost) (at cost)

THEORY.
4 28 34 45

Defined Contribution and Defined Benefit Pension Plans



Components of Change in the PBO

The Projected Benefits Obligation Changes as a Result of:		
Cause	**Effect**	**Frequency**
Service cost	+	Each period
Interest cost	+	Each period (except the first period of the plan, when no obligation exists to accrue interest)
Prior service cost	+	Only if the plan is amended (or initiated) that period
Loss or gain on PBO	+ or −	Whenever revisions are made in the pension liability estimate
Retiree benefits paid	−	Each period (unless no employees have yet retired under the plan)

Components of Pension Expense—Overview

Components of Pension Expense	
+	**Service cost** ascribed to employee service during the period
+	**Interest** accrued on the pension liability
−	**Return** on the plan assets
	Amortized portion of:
+	**Prior service cost** attributed to employee service before an amendment to the pension plan
+ or (−)	**Losses or (gains)** from revisions in the pension liability or from investing plan assets
=	**Pension expense**

- Interest and investment return are **financing** aspects of the pension cost
- Recognition of some elements of the pension expense is delayed

PART C: Determining Pension Expense

Illustration: Components of the Periodic Pension Expense

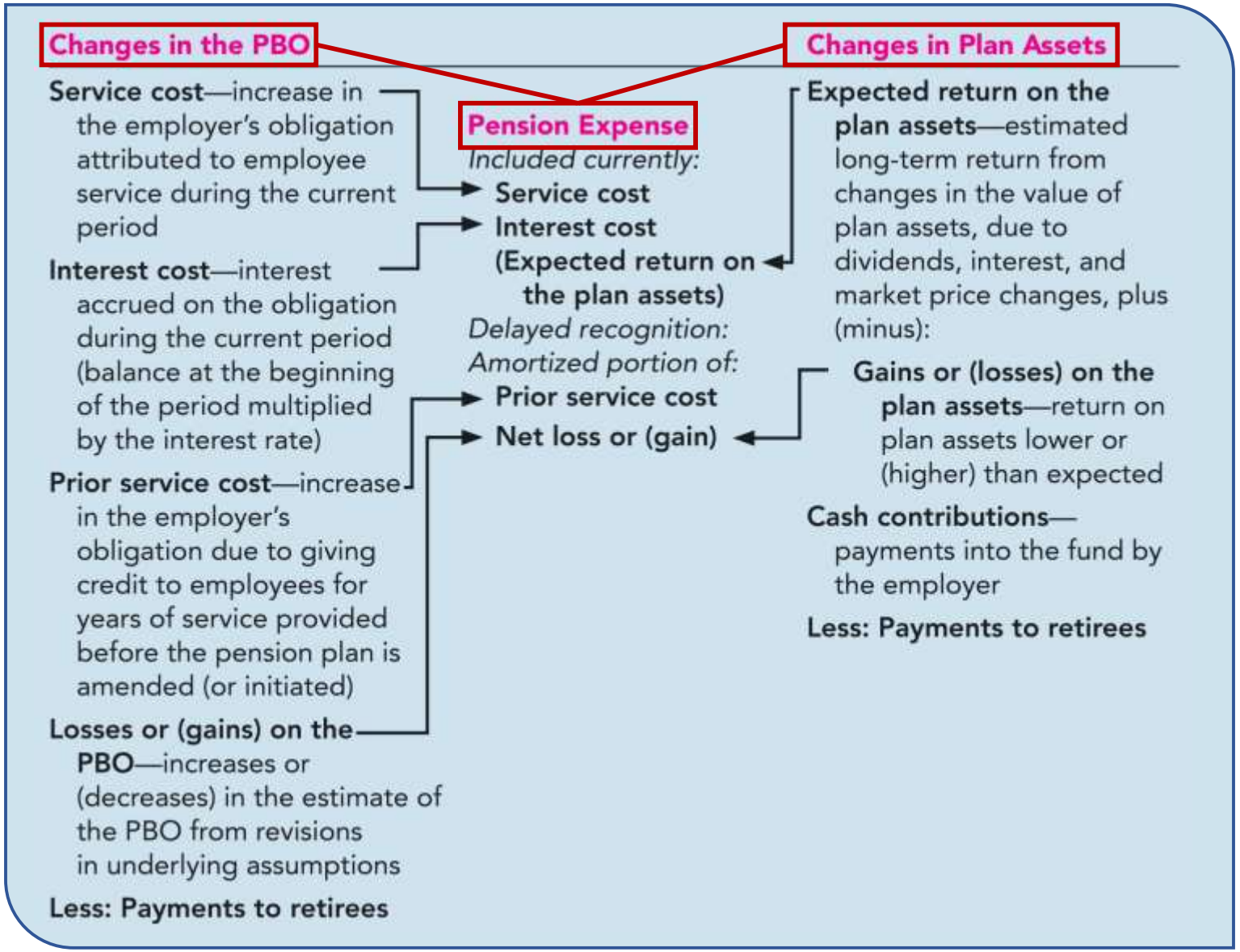
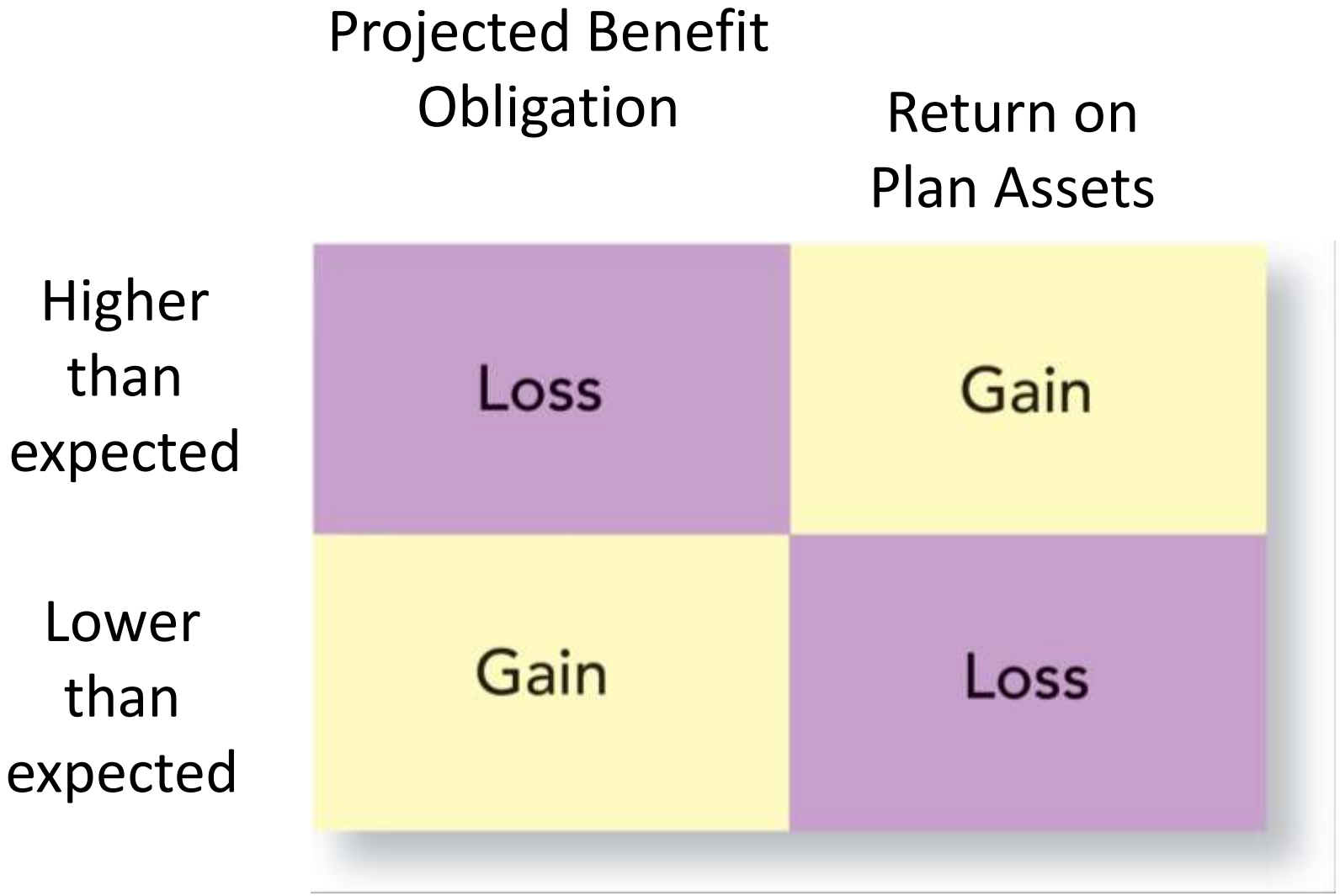
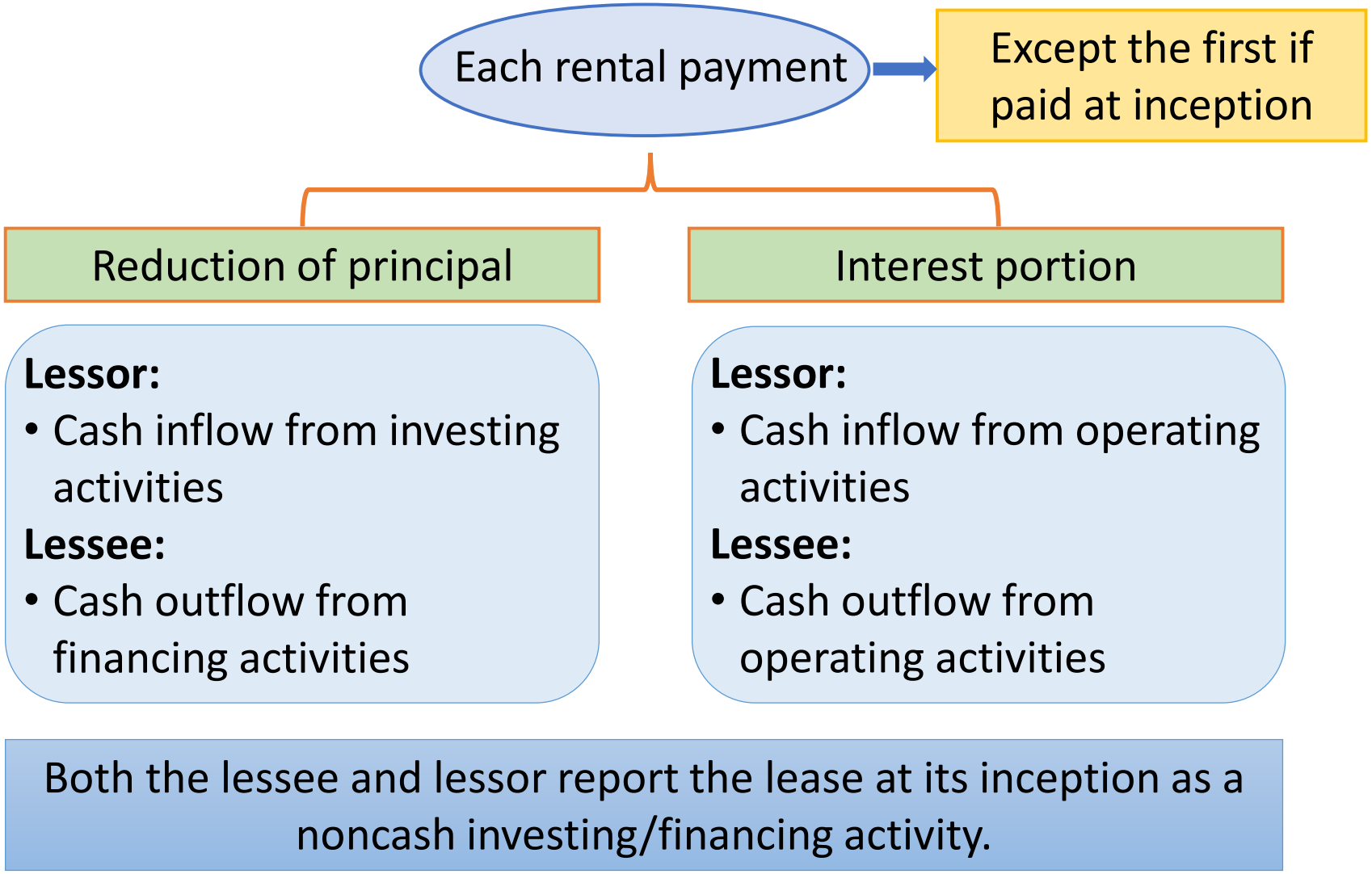


Illustration: Gains and Losses

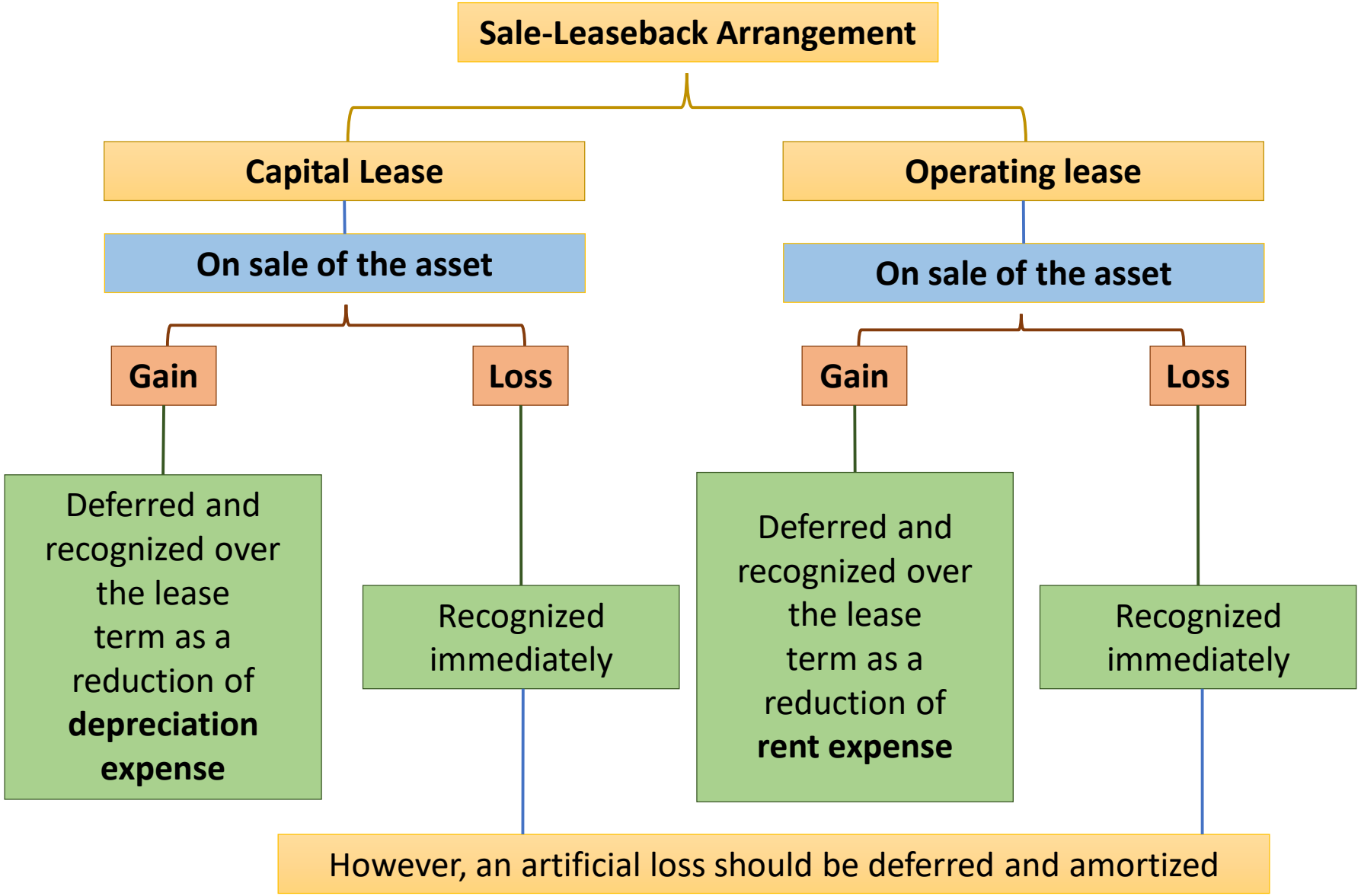


Statement of Cash Flow Impact (continued)

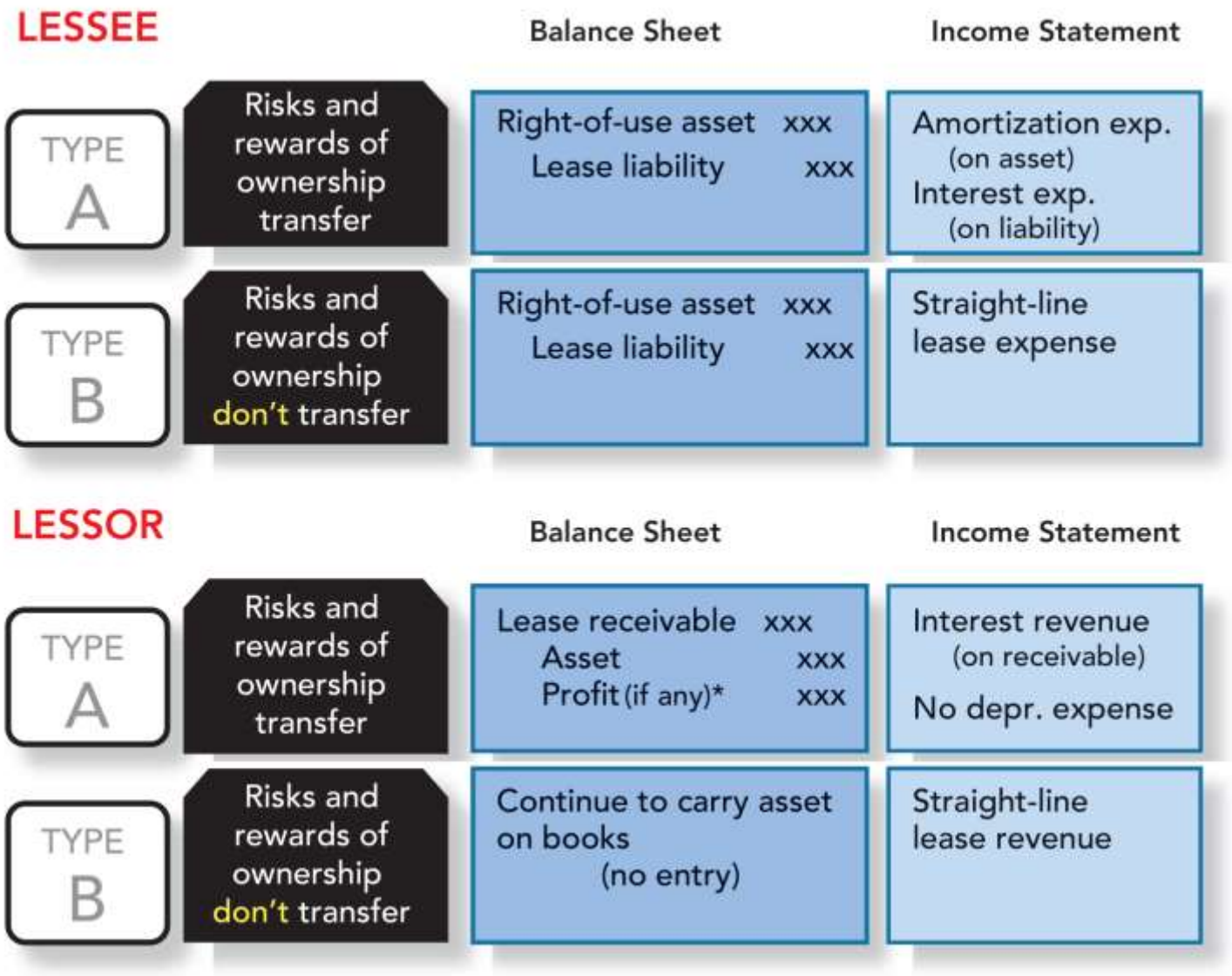
Capital Leases and Direct Financing Leases



Gains and losses on sale-leasebacks—Summary



Lessee and Lessor Accounting Under the Proposed Lease Accounting Standards Update

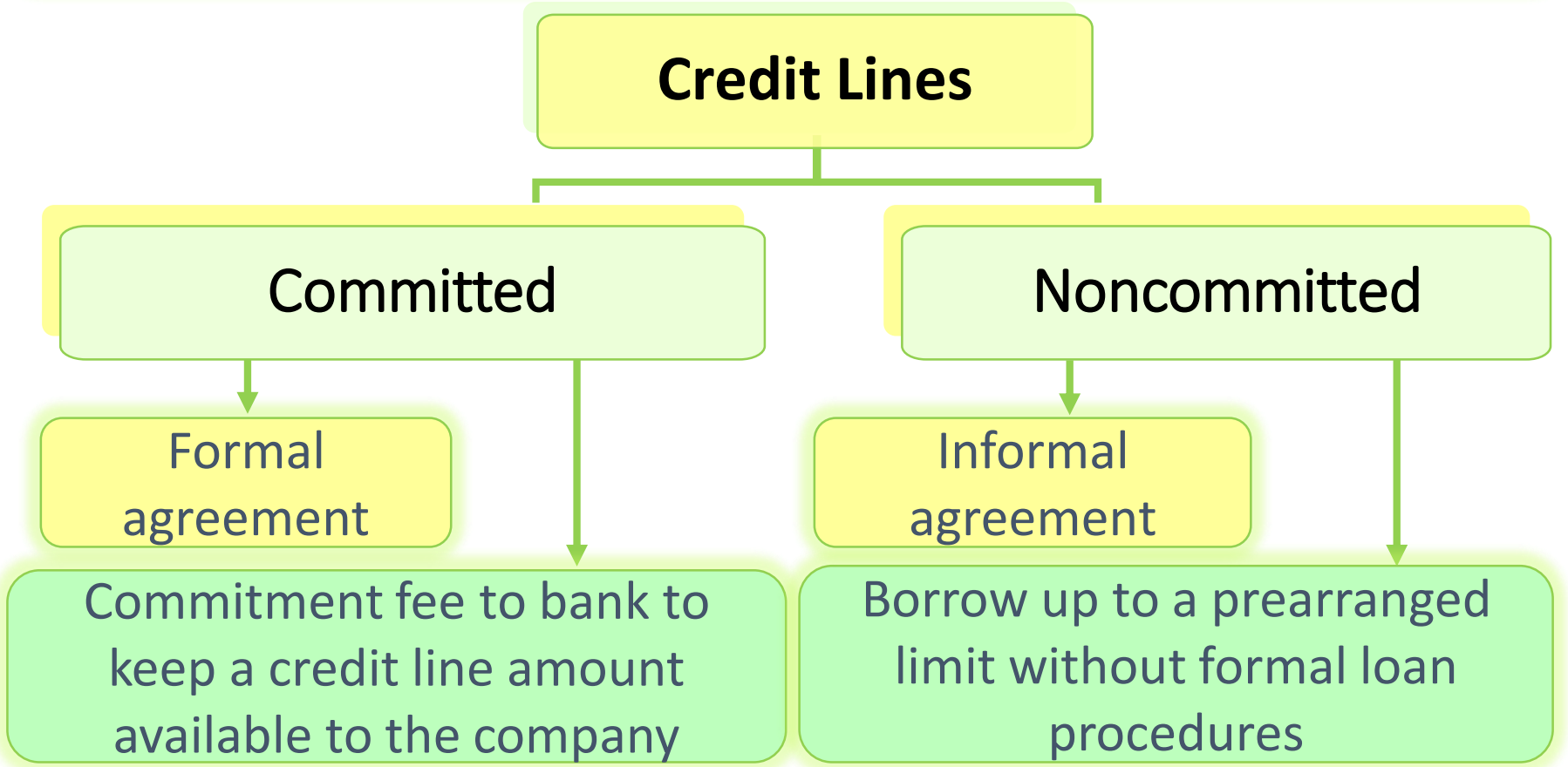


Summary of Time Value of Money Concepts

Concept	Summary	Formula	Table
Future value (FV) of $1	The amount of money that a dollar will grow to at some point in the future.	$FV = \$1\,(1 + i)^n$	1
Present value (PV) of $1	The amount of money today that is equivalent to a given amount to be received or paid in the future.	$PV = \frac{\$1}{(1 + i)^n}$	2
Future value of an ordinary annuity (FVA) of $1	The future value of a series of equal-sized cash flows with the first payment taking place at the end of the first compounding period.	$FVA = \frac{(1 + i)^n - 1}{i}$	3
Present value of an ordinary annuity (PVA) of $1	The present value of a series of equal-sized cash flows with the first payment taking place at the end of the first compounding period.	$PVA = \frac{1 - \frac{1}{(1 + i)^n}}{i}$	4
Future value of an annuity due (FVAD) of $1	The future value of a series of equal-sized cash flows with the first payment taking place at the beginning of the annuity period.	$FVAD = \left[\frac{(1 + i)^n - 1}{i}\right] \times (1 + i)$	5
Present value of an annuity due (PVAD) of $1	The present value of a series of equal-sized cash flows with the first payment taking place at the beginning of the annuity period.	$PVAD = PVA = \left[\frac{1 - \frac{1}{(1 + i)^n}}{i}\right] \times (1 + i)$	6

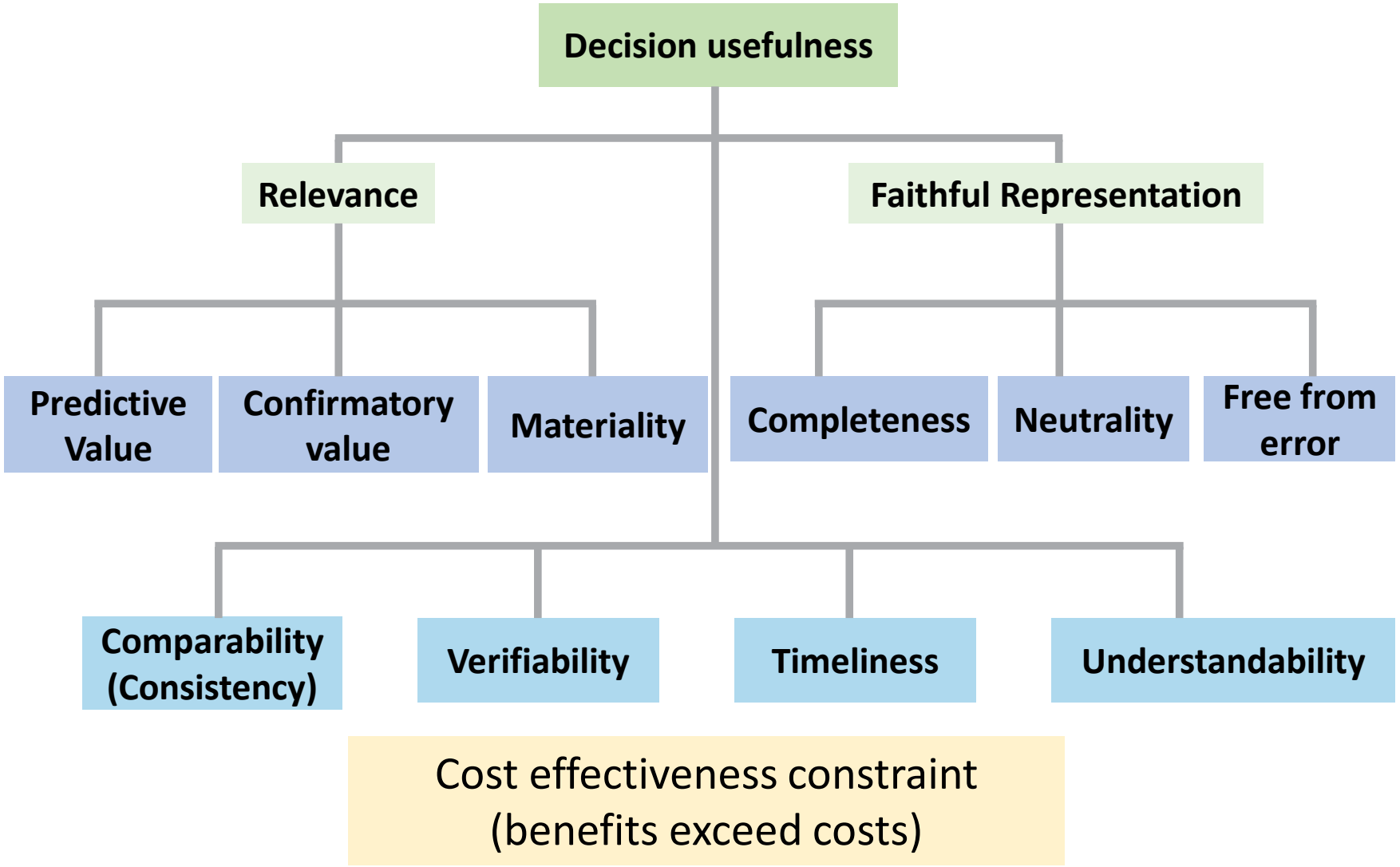
Credit Lines

A **line of credit** is an agreement to provide short-term financing, with amounts withdrawn by the borrower only when needed



Borrower may be required to maintain a compensating balance in the bank

Hierarchy of Qualitative Characteristics of Financial Information



Risk Analysis—Using Financial Statement Information

- Goal is to gain a glimpse of the future from past and present data using various tools and techniques

Comparative financial statements

– Allow financial statement users to compare year-to-year financial position

– Help an analyst detect and predict trends

Horizontal analysis

– Allow analysts to enhance their comparison by expressing each item as a percentage of that same item in the financial statements of **another year**

Vertical analysis

– Involves expressing each item in the financial statements as a percentage of an appropriate corresponding total but **within the same year**

Risk Analysis—Using Financial Statement Information

Ratio analysis

- Most common way of comparing accounting numbers to evaluate the performance and risk of a firm
- Allows analysts to control for size differences over time and among firms

Default risk

- Concerned about a company's ability to pay its obligations when they come due

Operational risk

- Relates more to how adept a company is at withstanding various events that might impair its ability of earning profits

Underlying Assumptions

- The **economic entity** assumption presumes that economic events can be identified specifically with an economic entity.
- The **going concern** assumption anticipates that a business entity will continue to operate indefinitely.
- The **periodicity** assumption allows the life of a company to be divided into artificial time periods to provide timely information.
- The **monetary unit** used in U.S. financial statements is the U.S. dollar.

Measurement

GAAP currently employs a "**mixed attribute**" measurement model. The five measurement attributes are:

- **Historical cost:** original transaction value adjusted for depreciation and amortization.
- **Net realizable value:** the amount of cash into which an asset is expected to be converted in the ordinary course of business
- **Current cost:** the cost that would be incurred to purchase or reproduce the asset.
- **Present (or discounted) value:** calculated by removing the time value of money from future cash flows
- **Fair value:** the price that would be received to sell assets or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

Measurement

Fair Value (called *current market value* originally in *SFAC 5*)

- Bases measurements on the price that would be received to sell assets or transfer liabilities in an orderly market transaction

Fair value can be measured using:

1. **Market approach:** Valuation based on market information
2. **Income approach:** Estimates future amounts and then mathematically converts those amounts to a single present value
3. **Cost approach:** Estimates the amount that would be required to buy or construct an asset of similar quality and condition

Reporting Accounting Changes and Error Corrections

Two approaches to report accounting changes and error corrections:

Retrospective approach

- Financial statements issued in **previous years** are revised
- Statements are made to appear as if the newly adopted accounting method had been applied all along or that the error had never occurred
- Then, a journal entry is created to adjust all account balances affected

Prospective approach

- Effects of a change are reflected in the financial statements of only the **current** and **future** years

PART A: Accounting Changes

Illustration: Types of Accounting Changes

Type of Change	Description	Examples
Change in accounting principle	Change from one generally accepted accounting principle to another.	• Adopt a new Accounting Standard. • Change methods of inventory costing. • Change from cost method to equity method, or vice versa.
Change in accounting estimate	Revision of an estimate because of new information or new experience.	• Change depreciation methods.* • Change estimate of useful life of depreciable asset. • Change estimate of residual value of depreciable asset. • Change estimate of periods benefited by intangible assets. • Change actuarial estimates pertaining to a pension plan.
Change in reporting entity	Change from reporting as one type of entity to another type of entity.	• Consolidate a subsidiary not previously included in consolidated financial statements. • Report consolidated financial statements in place of individual statements.

*A change in depreciation methods is a change in estimate that is achieved by a change in accounting principle.

Illustration: Correction of Errors

Type of Change	Description	Examples
Error correction	Correction of an error caused by a transaction being recorded incorrectly or not at all.	• Mathematical mistakes. • Inaccurate physical count of inventory. • Change from the cash basis of accounting to the accrual basis. • Failure to record an adjusting entry. • Recording an asset as an expense, or vice versa. • Fraud or gross negligence.

Illustration: Transfer between Investment Categories

Transfer from:	To:	Unrealized Gain or Loss from Transfer at Fair Value
Either HTM or AFS	Trading	Include in current net income the total unrealized gain or loss, as if it all occurred in the current period.
Trading	Either HTM or AFS	Include in current net income any unrealized gain or loss that occurred in the current period prior to the transfer. (Unrealized gains and losses that occurred in prior periods already were included in net income in those periods.)
Held-to-maturity	Available-for-sale	No current income effect. Report total unrealized gain or loss as a separate component of shareholders' equity (in AOCI).
Available-for-sale	Held-to-maturity	No current income effect. Don't write off any existing unrealized holding gain or loss in AOCI, but amortize it to net income over the remaining life of the security (fair value amount becomes the security's amortized cost basis).

Expense Recognition

Often matches revenues and expenses that arise from the same transactions or other events

Four approaches:

- Based on an **exact cause-and-effect relationship**
- By **associating an expense with the revenues** recognized in a specific time period
- By a **systematic and rational allocation** to specific time periods
- **In the period incurred**, without regard to related revenue

Illustration: Types of Temporary Differences

	Revenues (or gains)	Expenses (or losses)
Reported in the income statement now, but on the tax return later	• Installment sales of property (installment method for taxes) • Unrealized gain from recording investments at fair value (taxable when asset is sold)	• Estimated expenses and losses (tax-deductible when paid) • Unrealized loss from recording investments at fair value or inventory at LCM (tax-deductible when asset is sold)
Reported on the tax return now, but in the income state-ment later	• Rent collected in advance • Subscriptions collected in advance • Other revenue collected in advance	• Accelerated depreciation on the tax return in excess of straight-line depreciation in the income statement • Prepaid expenses (tax-deductible when paid)

Multiple Temporary Differences

- Use the same approach for multiple temp. differences
- All temporary differences are categorized according to whether they create:

Future taxable amounts

- The total of the future taxable amounts then is multiplied by future tax rate(s) to determine the appropriate balance for the deferred tax liability

Future deductible amounts

- The total of the future deductible amounts is multiplied by future tax rate(s) to determine the appropriate balance for the deferred tax asset