Financial Accounting

Sixth Edition

Inventory and Cost of Goods Sold

CHAPTER 6

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PART A

REPORTING INVENTORY AND COST OF GOODS SOLD

Learning Objective 1

LO6–1 Understand that inventory flows from manufacturing companies to merchandising companies and is reported as an asset in the balance sheet.

Inventory

- ***Inventory*** includes items a company intends for sale to customers in the ordinary course of business.
  - Inventory also includes items that are not yet finished products.
  - Typically reported as a *current asset* in the balance sheet.

Manufacturing and Merchandising Companies

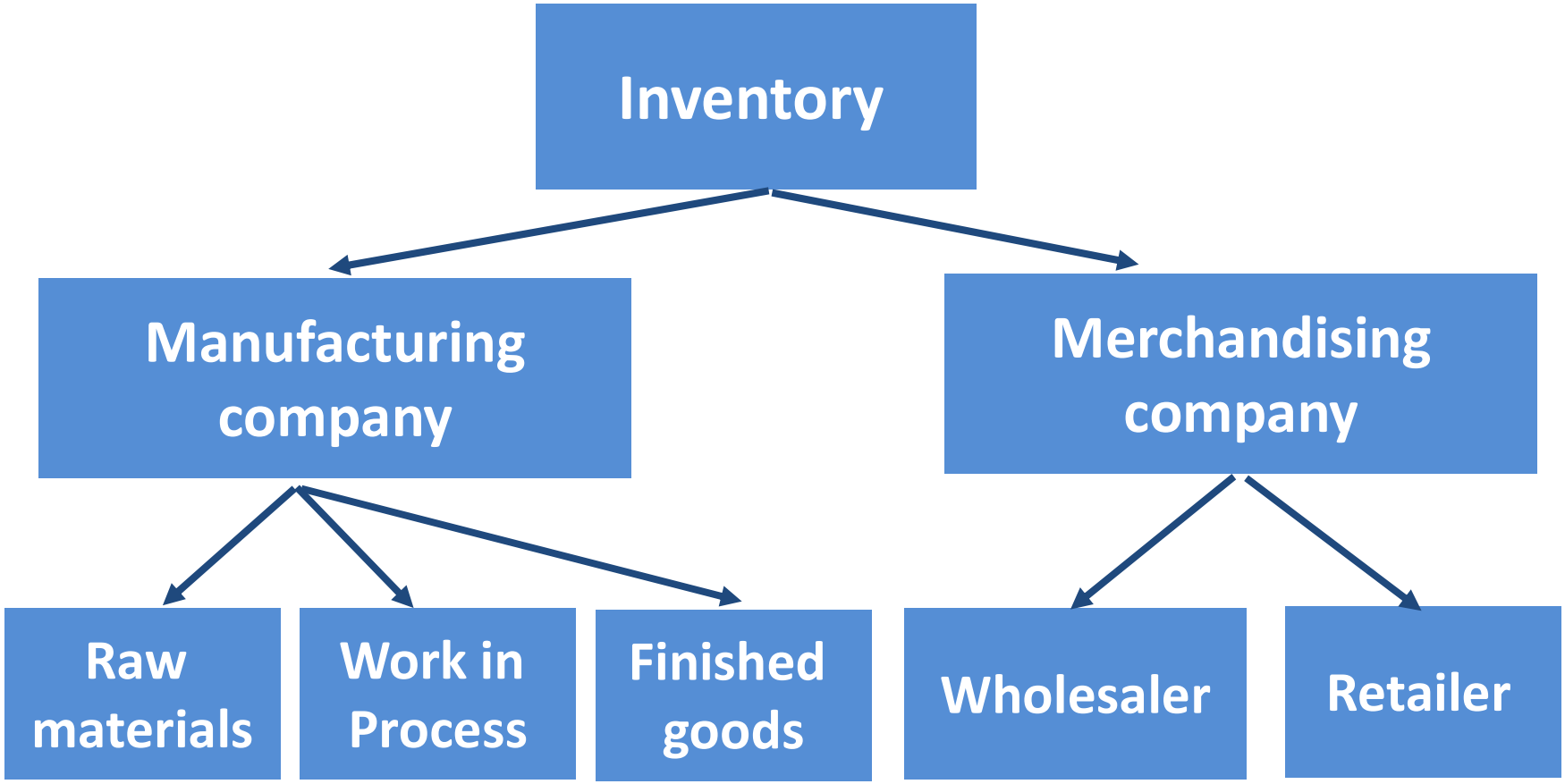


Illustration 6–1
Inventory Amounts for a Manufacturing Company (Intel) Versus a Merchandising Company (Best Buy)

INVENTORY
(from balance sheets)

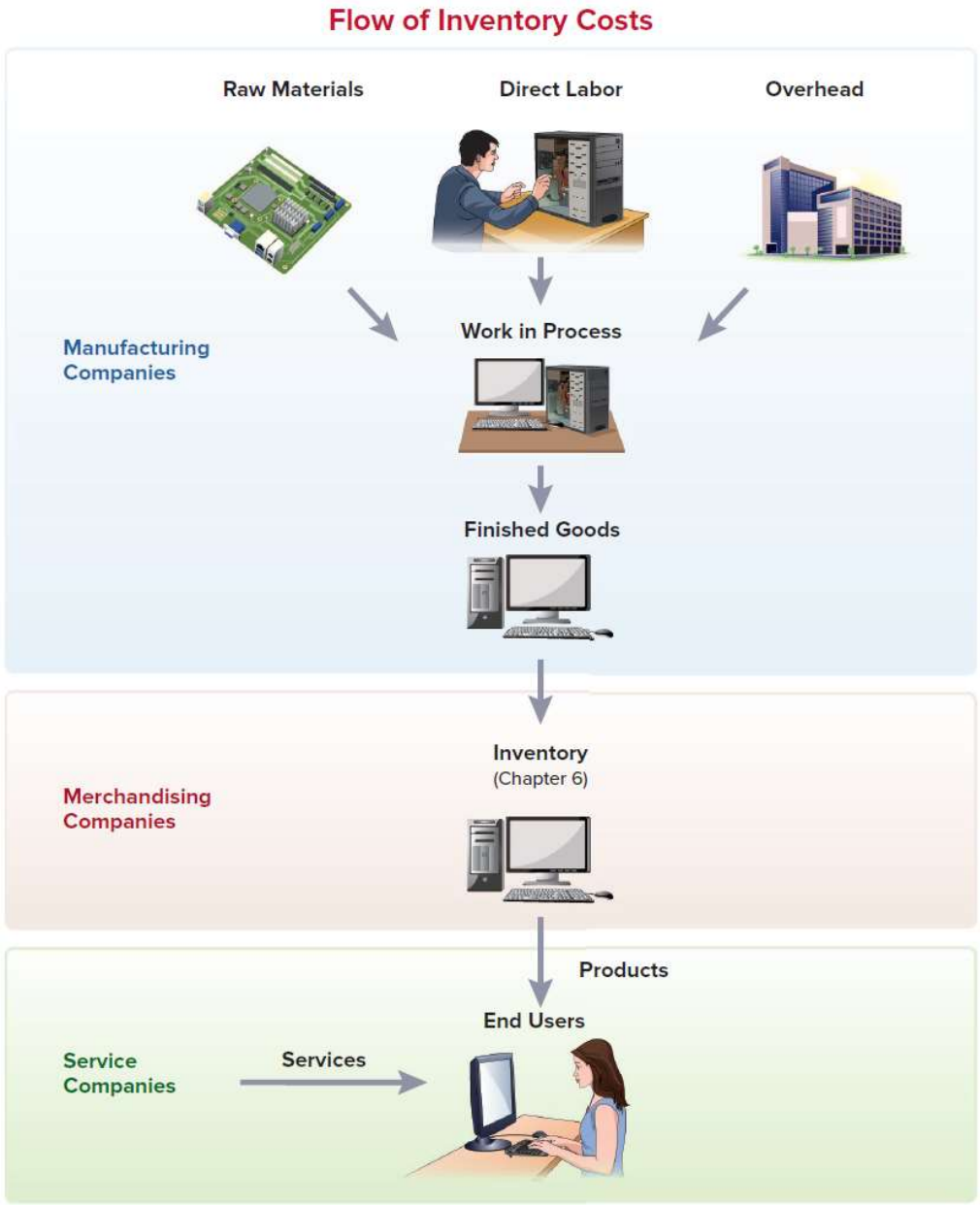
Inventory accounts ($ in millions)	Intel	Best Buy
Raw materials	$ 840	
Work in process	6,225	
Finished goods	1,679	
Merchandise inventories		$5,174
Total inventories	$8,744	$5,174

Key Point

- Service companies record revenues when providing services to customers.
- Merchandising and manufacturing companies record revenues when selling inventory to customers.

Illustration 6–2

Types of Companies and Flow of Inventory Costs



Concept Check 6–1

Which of the following inventory accounts consists of items for which the manufacturing process is complete?

a. Raw Materials

b. Work in Process

c. Cost of Goods Sold

d. Finished Goods

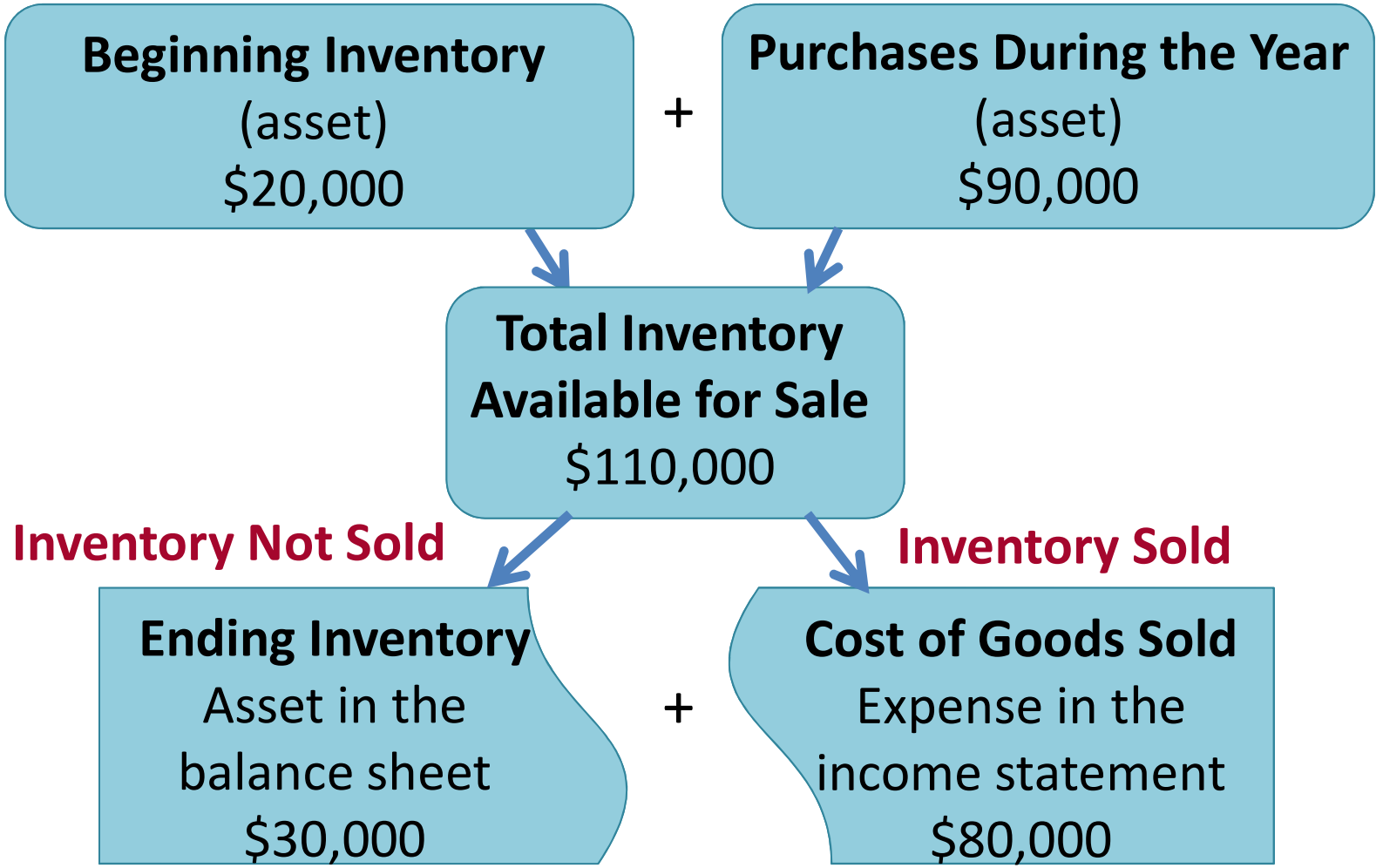
Finished goods inventory is the cost of fully assembled but unshipped inventory at the end of the reporting period.

Learning Objective 2

LO6–2 Understand how cost of goods sold is reported in a multiple-step income statement.

Illustration 6–3

Relationship between Inventory and Cost of Goods Sold



Concept Check 6–2

Cost of goods sold is:

a. Reported in the income statement
b. Reported in the balance sheet
c. A current asset
d. The cost of inventory on hand at the end of the period

Cost of goods sold is an expense account reported in the income statement.

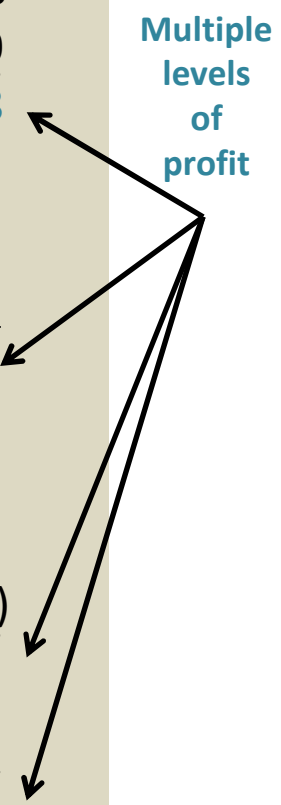
Key Point

- Inventory is a current asset reported in the balance sheet and represents the cost of inventory ***not yet sold*** at the end of the period.
- Cost of goods sold is an expense reported in the income statement and represents the cost of inventory ***sold***.

Illustration 6–4

Multiple-Step Income Statement for Best Buy

Best Buy Co., Inc. Multiple-Step Income Statement For the year ended January 31, 2020 ($in millions)	
Revenues (net of returns, allowances, and discounts)	$43,638
Cost of goods sold	33,590
Gross profit	10,048
Selling, general, and administrative expenses (includes advertising, salaries, rent, utilities, supplies, depreciation, and other operating expenses)	8,039
Operating income	2,009
Other income (expense):	
Gain on sale of investment	1
Investment income and other	47
Interest expense	(64)
Income before income taxes	1,993
Income tax expense	452
Net income*	$ 1,541



**Amounts include those from Best Buy's actual income statement excluding small adjustments for discontinued operations and noncontrolling interest.*

Concept Check 6–3

Which level of profitability is considered profit from normal operations?

a. Gross profit

b. Operating income

c. Income before taxes

d. Net income

Operating income is measured as gross profit (sales revenue minus cost of goods sold) minus operating expenses. Income before taxes and net income include nonoperating items, which are not considered part of normal operations.

Key Point

A multiple-step income statement reports multiple levels of profitability.

- **Gross profit** equals net revenues (or net sales) minus cost of goods sold.
- **Operating income** equals gross profit minus operating expenses.
- **Income before income taxes** equals operating income plus nonoperating revenues and minus nonoperating expenses.
- **Net income** equals all revenues minus all expenses.

Learning Objective 3

LO6–3 Determine the cost of goods sold and ending inventory using different inventory cost methods.

Inventory Cost Methods

- **Specific identification (not practicable)**
  - Matches each unit of inventory with its actual cost
- **First-in, first-out (FIFO)**
  - *Assumes* first units purchased are first ones sold
- **Last-in, first-out (LIFO)**
  - *Assumes* last units purchased are first ones sold
- **Weighted-average cost**
  - *Assumes* each unit of inventory has a cost equal to the weighted-average unit cost of all inventory items.

Illustration 6–5
Inventory Transactions for Mario's Game Shop

Date	Transaction	Number of Units	Unit Cost	Total Cost
Jan. 1	Beginning inventory	100	$ 7	$ 700
Apr. 25	Purchase	300	9	2,700
Oct. 19	Purchase	600	11	6,600
	Total available for sale	1,000		$10,000
Jul. 17	Sale	300		
Dec. 15	Sale	500		
	Total units sold	800		
Dec. 31	Ending inventory	200		

Specific Identification

- Matches—or identifies—each unit of inventory with its actual cost
- Mario's Game Shop Example:
  - Suppose the actual units sold include 100 units of beginning inventory, 200 units of the April 25 purchase, and 500 units of the October 19 purchase. The cost of those units would be reported as cost of goods sold.
  - The cost of the 200 units remaining (consisting of 100 from the April 25 purchase and 100 from the October 19 purchase) would be reported as ending inventory.
- Not practicable for most companies; used primarily by companies with unique, expensive products with low sales volume

FIFO, LIFO, and Weighted-Average Cost

- Most companies use one of the three inventory cost flow assumptions—FIFO, LIFO, or weighted-average cost.
  - Note the use of the word assumptions. FIFO, LIFO, and weighted-average cost assume a particular pattern of inventory cost flows.
  - However, the actual flow of inventory does not need to match the assumed cost flow in order for the company to use a particular method.
- Companies are allowed to report inventory costs by assuming which units of inventory are sold and not sold, even if this does not match the actual flow.

Illustration 6–6
Inventory Calculation Assuming the FIFO Method

Inventory Transactions for Mario's Game Shop—FIFO METHOD

Beginning Inventory and Purchases	Number of Units	×	Unit Cost	=	Total Cost		Cost of Goods Available for Sale = Cost of Goods Sold	+	Ending Inventory
Jan. 1	100		$ 7		$ 700	Sold first 800 units	$ 700		
Apr. 25	300		9		2,700		2,700		
Oct. 19*	400		11		4,400		4,400		
	200		11		2,200	Not sold			$2,200
	1,000				$10,000	=	$7,800	+	$2,200
						Cost of Goods Available for Sale =	Cost of Goods Sold	+	Ending Inventory

*Total of 600 units were purchased on October 19.

Common Mistake

- When calculating cost of goods sold using FIFO, students sometimes forget to count beginning inventory as the first purchase.
- These units were purchased last period, which was before any purchases this period, so they are assumed to be the first units sold.

Illustration 6–7
Inventory Calculation Assuming the LIFO Method

Inventory Transactions for Mario's Game Shop—LIFO METHOD

	Cost of Goods Available for Sale						Cost of Goods Sold	+	Ending Inventory
Beginning Inventory and Purchases	Number of Units	×	Unit Cost	=	Total Cost				
Jan. 1	100		$ 7		$ 700	Not sold			$ 700
Apr. 25	100		9		900	Not sold			900
	200		9		1,800	Sold last 800 units	$1,800		
Oct. 19*	600		11		6,600	Sold last 800 units	6,600		
	1,000				$10,000	=	$8,400	+	$1,600
					Cost of Goods Available for Sale	=	Cost of Goods Sold	+	Ending Inventory

*Total of 300 units were purchased on April 25.

Common Mistake

- Many students find it surprising that companies are allowed to report inventory costs using assumed amounts rather than actual amounts.
- Nearly all companies sell their actual inventory in a FIFO manner, but they are allowed to report it as if they sold it in a LIFO manner.
- Later, we'll see why that's advantageous.

Concept Check 6–4

A company has the following inventory transactions:

Jan. 1	Beginning inventory	100 units @ $4 each
Jan. 15	Purchase	100 units @ $5 each
Jan. 31	Purchase	100 units @ $6 each

What would be the cost of goods sold under the FIFO method if 120 units were sold in January?

a. $ 600

b. $ 500

c. $ 620

d. $ 720

Using FIFO, the first 120 units purchased are assumed to be sold. Cost of goods sold equals:

100	× $4	=	$400	(Beginning inventory)
20	× $5	=	100	(Purchase on Jan. 15)
120 units			**$500**	

Concept Check 6–5

A company has the following inventory transactions:

Jan. 1	Beginning inventory	100 units @ $4 each
Jan. 15	Purchase	100 units @ $5 each
Jan. 31	Purchase	100 units @ $6 each

What would be the cost of goods sold under the LIFO method if 120 units were sold in January?

a. $ 600

b. $ 500

c. $ 720

d. $ 700

Using LIFO, the last 120 units purchased are assumed to be sold. Cost of goods sold equals:

100 × $6 = $600 (Purchase on Jan. 31)
20 × $5 = 100 (Purchase on Jan. 15)
120 units **$700**

Weighted-Average Cost

- Under this method, we assume:
  - Both cost of goods sold and ending inventory consist of a random mixture of all the goods available for sale
  - Each unit of inventory has a cost equal to the weighted-average unit cost of all inventory items
  - The weighted-average cost is calculated as:

$$\frac{\text{Cost of goods available for sale}}{\text{Number of units available for sale}}$$

Illustration 6–8
Inventory Calculation Assuming the Weighted-Average Cost Method

Inventory Transactions for Mario's Game Shop—
WEIGHTED-AVERAGE COST METHOD

		Cost of Goods Available for Sale				
Date	**Transaction**	**Number of Units**	×	**Unit Cost**	=	**Total Cost**
Jan. 1	Beginning inventory	100		$ 7		$ 700
Apr. 25	Purchase	300		9		2,700
Oct. 19	Purchase	600		11		6,600
		1,000				**$10,000**

Weighted-average unit cost = **$10,000 / 1,000 units** = $10 per unit

Cost of goods sold	=	**800 sold**	×	**$10**	**$ 8,000**
Ending Inventory	=	**200 not sold**	×	**10**	**2,000**
					$10,000

Common Mistake

In calculating the weighted-average unit cost, be sure to use a weighted average of the unit cost instead of the simple average. In the example above, there are three unit costs: $7, $9, and $11.

- A simple average of these amounts is $9 [= ($7 + $9 + $11) ÷ 3].
  - The simple average, though, fails to take into account that more units were purchased at $11 than at $7 or $9.
- So we need to weight the unit costs by the number of units purchased.
  - We do that by taking the total cost of goods available for sale ($10,000) divided by the total number of units available for sale (1,000) for a weighted average of $10.

Illustration 6–9

Comparison of Cost of Goods Sold and Ending Inventory under the Three Inventory Cost Flow Assumptions for Mario's Game Shop

	GOODS AVAILABLE FOR SALE (1,000 Units)			=	COST OF GOODS SOLD (800 Units)	+	ENDING INVENTORY (200 Units)
							
Inventory at beginning of the year	**100 x $7**	=	$700				
1st purchase during the year	**300 x $9**	=	$2,700				
2nd purchase during the year	**600 x $11**	=	$6,600				
			$10,000 Available				
FIFO					100 x $7 300 x $9 400 x $11		200 x $11
				$10,000 =	$7,800	+	$2,200
LIFO					200 x $9 600 x $11		100 x $7 100 x $9
				$10,000 =	$8,400	+	$1,600
Weighted-Average Cost					800 x $10		200 x $10
				$10,000 =	$8,000	+	$2,000

Common Mistake

- FIFO and LIFO describe more directly the calculation of cost of goods sold, rather than ending inventory.
  - For example, FIFO (first-in, first-out) directly suggests which inventory units are assumed sold (the first ones in) and therefore used to calculate cost of goods sold.
- It is implicit under FIFO that the inventory units not sold are the last ones in and are used to calculate ending inventory.

Key Point

- Companies are allowed to report inventory costs by *assuming* which specific units of inventory are sold and not sold, even if this does not match the *actual* flow.
- The three major inventory cost flow assumptions are FIFO (first-in, first-out), LIFO (last-in, last-out), and weighted-average cost.

Learning Objective 4

LO6–4 Explain the financial statement effects and tax effects of inventory cost methods.

Choice of Inventory Reporting Methods

- **FIFO method**
  - Matches physical flow for most companies
  - Ending inventory reflects current cost
  - Balance-sheet approach
- **LIFO method**
  - Cost of goods sold reflects current cost
  - Income-statement approach
- **LIFO conformity rule**
  - Companies that use LIFO for tax reporting must also use LIFO for financial reporting

Illustration 6–10
Comparison of Inventory Cost Methods, When Costs Are Rising

	FIFO	LIFO	Weighted-Average
Balance sheet:			
Ending inventory	**$ 2,200**	**$ 1,600**	**$ 2,000**
Income statement:			
Sales revenue (800 × $15)	$12,000	$12,000	$12,000
Cost of goods sold	**7,800**	**8,400**	**8,000**
Gross profit	$ 4,200	$ 3,600	$ 4,000

- The ***choice*** of inventory method affects:
  - Reported ending inventory (**asset**)
  - Reported cost of goods sold (**expense**; and therefore profit)

Why Choose FIFO

- If a company wants to choose an inventory method that most closely approximates its actual physical flow of inventory, then for most companies, FIFO makes the most sense.
- Another reason managers may want to use FIFO relates to its effect on the financial statements.
- During periods of rising costs, which is the case for most companies, FIFO results in a:
  (1) higher ending inventory,
  (2) lower cost of goods sold, and
  (3) higher reported profit than does LIFO.

Why Choose LIFO

- The primary benefit of choosing LIFO is tax savings. LIFO results in the lowest amount of reported profits (when inventory costs are rising).
- Can a company have its cake and eat it too by using FIFO for financial reporting and LIFO for the tax return? No.
  - The IRS established the LIFO conformity rule, which requires a company that uses LIFO for tax reporting to also use LIFO for financial reporting.

Reporting the LIFO Difference

- The choice between FIFO and LIFO results in different amounts for ending inventory in the balance sheet and cost of goods sold in the income statement.
- Companies that report using LIFO must also report the difference between the LIFO amount and what that amount would have been if they had used FIFO.
- This difference is often referred to as the LIFO reserve.

Illustration 6–11

Impact of the LIFO Difference on Reported Inventory of Kroger Company

KROGER COMPANY
Balance Sheet (partial)

($ in millions)	2020
Cash and temporary cash investments	$ 399
Store deposits in transit	1,179
Receivables	1,706
FIFO inventory	**8,464**
LIFO reserve	**(1,380)**
Prepaid and other current assets	522
Total current assets	$10,890

Consistency in Reporting

- Once the company chooses a method, it is not allowed to frequently change to another one.
- A company need not use the same method for all its inventory.
- A company informs its stockholders of the inventory method(s) being used in a note to the financial statements.

Concept Check 6–6

During a period of rising prices, which inventory cost flow assumption would result in the highest cost of goods sold, and thereby the lowest net income?

a. FIFO

b. LIFO

c. Weighted-average

d. FILO

Using LIFO, we assume that the last units purchased (the last ones in) are the first ones sold (the first out). If prices are rising, cost of goods sold would be composed of the latest (and highest) costs using LIFO.

Concept Check 6–7

Which inventory method or cost flow assumption most closely resembles the actual physical flow of goods?

a. FIFO

b. LIFO

c. Weighted-average

d. FILO

Supermarkets, sporting goods stores, clothing shops, electronics stores, or just about any company you're familiar with generally sells its oldest inventory first (first-in, first-out).

Key Point

- Generally, FIFO more closely resembles the actual physical flow of inventory.
- When inventory costs are rising, FIFO results in higher reported inventory in the balance sheet and higher reported income in the income statement.
- Conversely, LIFO results in a lower reported inventory and net income, reducing the company's income tax obligation.

PART B

RECORDING INVENTORY TRANSACTIONS

Perpetual Inventory System and Periodic Inventory System

Perpetual Inventory System	Periodic Inventory System
• Maintains a continual record of inventory on hand and inventory purchased and sold • Helps managers make good decisions • Most often used in practice	• Does not continually record inventory amounts • Calculates balance of inventory at end of period based on physical count • Adjusts for purchases and sales of inventory

Learning Objective 5

LO6–5 Record inventory transactions using a perpetual inventory system.

Illustration 6–12

Inventory Transactions for Mario's Game Shop

Date	Transaction	Details	Total Cost	Total Revenue
Jan. 1	Beginning inventory	100 units for $7 each	$ 700	
Apr. 25	Purchase	300 units for $9 each	2,700	
Jul. 17	Sale	300 units for $15 each		$ 4,500
Oct. 19	Purchase	600 units for $11 each	6,600	
Dec. 15	Sale	500 units for $15 each		7,500
	Totals		$10,000	$12,000

Example–Inventory Purchase

On April 25, Mario's purchases inventory for $2,700 on account (300 units @ $9 each)

April 25	Debit	Credit
Inventory	**2,700**	
Accounts Payable		**2,700**
(Purchase inventory on account)		

- The entry involves:
  - Increasing the balance of inventory (an asset)
  - Increasing the balance of accounts payable (a liability)

Example– Inventory Sales

- On July 17, Mario's sells inventory on account for $4,500 (300 units @ $15 each)

July 17	Debit	Credit
Accounts Receivable	**4,500**	
Sales Revenue		**4,500**
(Sell inventory on account)		
($4,500 = 300 units × $15)		
Cost of Goods Sold	**2,500**	
Inventory		**2,500**
(Record cost of inventory sold)		
($2,500 = [100 units × $7] + [200 units × $9])		

- Sales price of $4,500 – Cost of units sold of $2,500 = Profit on sale of $2,000

Illustration 6–13
Inventory Account for Mario's Game Shop

	Inventory		
Jan. 1 Beginning	700		
Apr. 25 Purchase	2,700	2,500	Jul. 17 Sale
Oct. 19 Purchase	6,600	5,300	Dec. 15 Sale
	10,000	7,800	
Dec. 31 Ending			
FIFO amount	Bal. 2,200		

Key Point

- The perpetual inventory system maintains a continual—or perpetual—record of inventory purchased and sold.
- When companies purchase inventory using a perpetual inventory system, they increase the Inventory account and either decrease Cash or increase Accounts Payable.
- When companies sell inventory, they make two entries:
  1) They increase an asset account (Cash or Accounts Receivable) and increase Sales Revenue, and
  2) They increase Cost of Goods Sold and decrease Inventory.

Simple Year-End Adjustment from FIFO to LIFO

- Most companies maintain their own inventory records on a FIFO basis.
- However, many companies choose to report their inventory using the LIFO assumption.
  - These companies make a **LIFO adjustment**–An adjustment used to convert a company's own inventory records maintained throughout the year on a FIFO basis to LIFO basis for preparing financial statements at the end of the year.

Illustration 6–14

Inventory Account for Mario's Game Shop, after LIFO Adjustment

December 31	Debit	Credit
Cost of Goods Sold	**600**	
Inventory		**600**
(Record the LIFO adjustment)		

Inventory

Jan. 1	Beginning	700			
Apr. 25	Purchase	2,700	2,500	Jul. 17	Sale
Oct. 19	Purchase	6,600	5,300	Dec. 15	Sale
		10,000	7,800		
Dec. 31	FIFO amount	2,200			
			600	Dec. 31	LIFO adjustment
Dec. 31	Ending LIFO amount	Bal. 1,600			

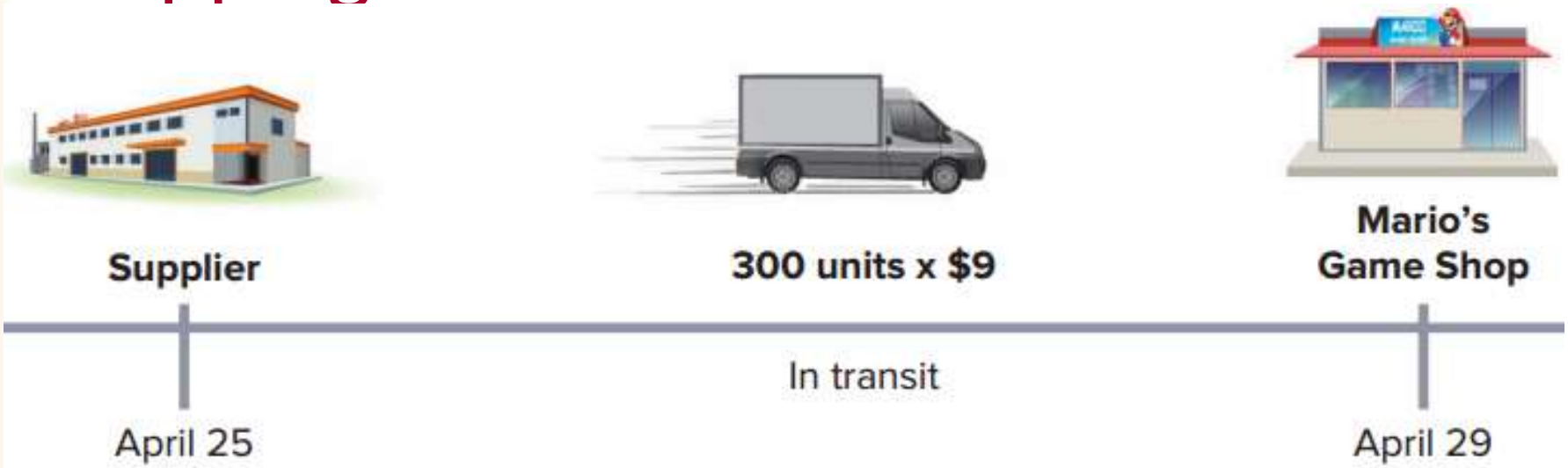
Key Point

- Most companies maintain their own inventory records on a FIFO basis, and then some prepare financial statements on a LIFO basis.
- To adjust their FIFO inventory records to LIFO for financial reporting, companies use a LIFO adjustment at the end of the year.

Additional Inventory Transactions

- **Freight charges**
  - **FOB *shipping point*** means title passes when the seller *ships* the inventory.
  - **FOB *destination*** means title passes when the inventory reaches the buyer's *destination*.
- **Purchase discounts**
  - Discount offered by seller to buyer for quick payment
- **Purchase returns**
  - Buyer returns unwanted or defective inventory

Illustration 6–15
Shipping Terms



1. FOB Shipping Point. Title passes at shipping point (when inventory leaves the supplier's warehouse). Mario would record the purchase on April 25..

Shipping Terms

2. FOB Destination. Title passes at destination (when inventory arrives at Mario's). Mario would record the purchase on April 29.

Illustration 6–16

Accounting for Shipping Costs by Amazon.com

AMAZON.COM, INC.
Notes to the Financial Statements (excerpt)

Cost of sales primarily consists of the purchase price of consumer products, **inbound and outbound shipping costs**, including costs relating to sortation and delivery centers and where we are the transportation service provider...

Concept Check 6–8

Which of the following transactions would increase the balance of the inventory account for a company using the perpetual inventory system?

a. Costs of incoming freight charges on merchandise inventory

b. A return of damaged inventory to the vendor

c. A purchase discount taken for prompt payment

d. Shipping charges for outgoing inventory

Costs of incoming freight charges on merchandise inventory would increase the balance of the inventory account. Returns of inventory would decrease the account balance, as would a purchase discount given for prompt payment.

Illustration 6–17

Gross Profit for Mario's Game Shop after Additional Inventory Transactions

	Units	Unit Price	Total
Sales revenue	800	$15	$12,000
Cost of goods sold:	**Units**	**Unit Cost**	**Total**
Beginning inventory	100	$ 7	$ 700
Purchase on April 25	300	9	2,700
Freight charges			300
Purchase discount			(54)
Purchase on October 19	400	11	4,400
	800		$ 8,046
Gross profit			$ 3,954

Key Point

- For most companies, freight charges are added to the cost of inventory, whereas purchase returns and purchase discounts are deducted from the cost of inventory.
- Some companies choose to report freight charges on outgoing shipments as part of selling expenses instead of cost of goods sold.

Illustration 6–18
Comparison of Purchase and Sale of Inventory Transactions

Purchaser — Camcorder Central			Seller — Sony Corporation		
Purchase on Account			**Sale on Account***		
Inventory	52,500		Accounts Receivable	52,500	
Accounts Payable		52,500	Sales Revenue		52,500
Purchase Return			**Sales Return**		
Accounts Payable	2,500		Sales Return	2,500	
Inventory		2,500	Accounts Receivable		2,500
Payment on Account with Discount			**Receipt on Account with Discount**		
Accounts Payable	50,000		Cash	49,000	
Inventory		1,000	Sales Discounts	1,000	
Cash		49,000	Accounts Receivable		50,000

*In practice, Sony also records the cost of inventory sold at the time of the sale. For simplicity, we omit this part of the transaction since Camcorder Central has no comparable transaction. We have also omitted Camcorder Central's March 20 sale of camcorders, since Sony is not party to that transaction.

PART C

LOWER OF COST AND NET REALIZABLE VALUE

Learning Objective 6

LO6–6 Apply the lower of cost and net realizable value rule for inventories.

Illustration 6–19
Lower of Cost and Net Realizable Value

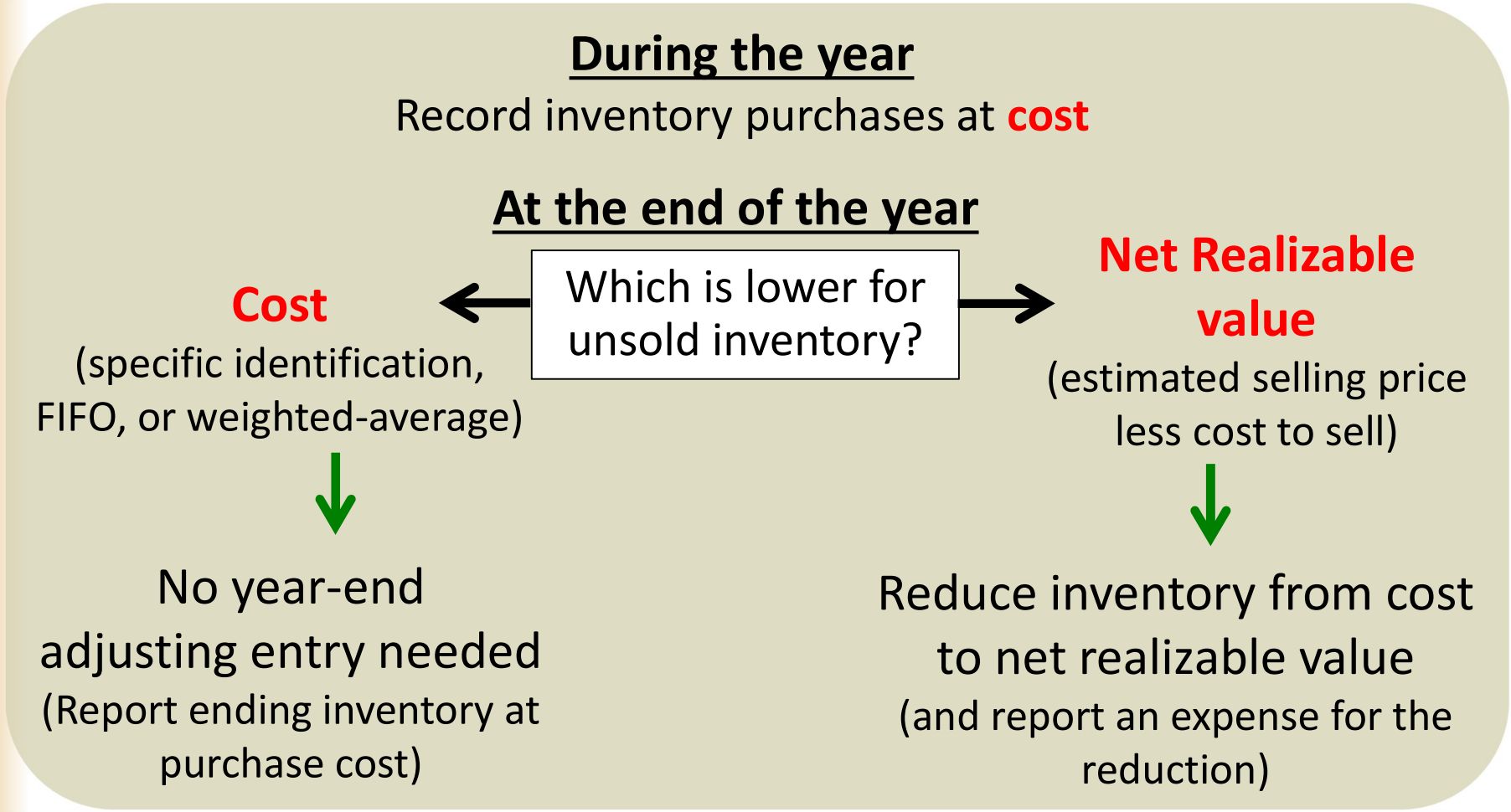


Illustration 6–20

Calculating the Lower of Cost and Net Realizable Value

Inventory Items	Quantity	Cost Per unit	Cost Total	NRV Per unit	NRV Total		Lower of Cost and NRV	Year-end Adjustment Needed*
FunStation 2	15	$300	$ 4,500	$200	$3,000	=	$ 3,000	$1,500
FunStation 3	20	400	8,000	450	9,000	=	8,000	0
			$12,500				$11,000	$1,500
			Recorded Cost				**Ending Inventory**	

*The year-end adjusting entry is needed when NRV is below cost. The adjustment equals the difference between cost and net realizable value.

Reduce 15 FunStation 2s from their original cost of $4,500 (= 15 units × $300) to their lower net realizable value of $3,000 (= 15 units × $200) with the following year-end adjusting entry:

December 31	Debit	Credit
Cost of Goods Sold (expense)	**1,500**	
Inventory		**1,500**
(Adjust inventory down to net realizable value)		

Concept Check 6–9

At the end of the year, a company reports the following inventory amounts ($ per unit):

Item	# of Units	Cost	Net Realizable Value
A	100	$4	$8
B	150	$8	$6

The amount to report for ending inventory using the lower of cost and net realizable value is:

a. $1,600
b. $1,700
c. $2,000
d. $1,300

The lower of cost and net realizable value is:

Item A = $4 per unit (cost)

Item B = $6 per unit (net realizable value)

Ending inventory = $1,300

$1,300 = (100 units × $4) + (150 units × $6)

Concept Check 6–10

At the end of the year, a company reports the following inventory amounts ($ per unit):

Item	# of Units	Cost	Net Realizable Value
A	100	$4	$8
B	150	$8	$6

The year-end adjusting entry using the lower of cost and net realizable value would include:

a. A credit to Inventory for $300
b. A debit to Cost of Goods Sold for $400
c. A debit to Inventory for $500
d. A credit to Cost of Goods Sold for $700

Recorded cost of inventory = (100 units × $4) + (150 units × $8) = **$1,600**. Lower of cost and NRV = (100 units × $4) + (150 units × $6) = **$1,300**. The year-end adjusting entry to reduce inventory from its cost of $1,600 to NRV of $1,300 is:

Cost of Goods Sold	300	
Inventory		300

Key Point

- We report inventory at the lower of cost and net realizable value; that is, at cost (specific identification, FIFO, or weighted-average cost) or net realizable value (selling price minus cost of completion, disposal, and transportation), whichever is lower.
- When net realizable value falls below cost, we adjust downward the balance of inventory from cost to net realizable value.

ANALYSIS

INVENTORY ANALYSIS

Best Buy vs. Tiffany

Learning Objective 7

LO6–7 Analyze management of inventory using the inventory turnover ratio and gross profit ratio.

Inventory Turnover Ratio

Shows the *number of times* the firm sells its average inventory balance during a reporting period.

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

Average Days in Inventory

Indicates the approximate *number of days* the average inventory is held.

$$\text{Average days in inventory} = \frac{365}{\text{Inventory turnover ratio}}$$

Illustration 6–21

Inventory Turnover Ratios for Best Buy and Tiffany's

	Inventory Turnover Ratio	Average Days in Inventory
Best Buy	$33,590 ÷ **$5,291.5** = 6.3 times	$\frac{365}{6.3}$ = 58 days
Tiffany's	$1,662 ÷ **$2,446.0** = 0.7 times	$\frac{365}{0.7}$ = 521 days

- Best Buy's turnover ratio is much higher, and its average days in inventory is much lower
  - Best Buy sells its inventory more quickly

Concept Check 6–11

Net sales are $100,000 and cost of goods sold is $70,000. Inventory balances for the past two years are $10,000 and $20,000. What is the inventory turnover?

a. 4.67 times per year
b. 7.00 times per year
c. 6.67 times per year
d. 3.50 times per year

The inventory turnover measures how often a company sells, or turns over, its inventory. The inventory turnover would be computed as $70,000 ÷ ([10,000 + 20,000] ÷ 2). The result is 4.67 times per year.

Key Point

- Many students use ending inventory rather than average inventory in calculating the inventory turnover ratio.
- Generally, when you calculate a ratio that includes an income statement item (an amount generated over a period) with a balance sheet item (an amount at a particular date), the balance sheet item needs to be converted to an amount over the same period.
- This is done by averaging the beginning and ending balances of the balance sheet item.

Gross Profit Ratio

- Indicator of the company's successful management of inventory
- Measures the amount by which the sale price of inventory exceeds its cost per dollar of sales

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

Illustration 6–22

Gross Profit Ratios for Best Buy and Tiffany's

	Gross Profit/Net Sales	=	Gross Profit Ratio
Best Buy	$10,048 ÷ $43,638	=	23%
Tiffany	$2,762 ÷ $4,424	=	62%

- We saw earlier that Tiffany inventory turnover is much lower than that of Best Buy.
- But, we see now that Tiffany makes up for that lower turnover with a much higher gross profit margin.

Concept Check 6–12

Net sales are $100,000 and cost of goods sold is $70,000. Inventory balances for the past two years are $10,000 and $20,000. What is the gross profit ratio?

a. 3.5%

b. 4.7%

c. 30.0%

d. 42.9%

Net sales of $100,000 – Cost of goods sold of $70,000 = Gross profit of $30,000. Gross profit of $30,000 ÷ Net sales of $100,000 = Gross profit ratio of 30%.

Key Point

- The inventory turnover ratio indicates the number of times the firm sells, or turns over, its average inventory balance during a reporting period.
- The gross profit ratio measures the amount by which the sale of inventory exceeds its cost per dollar of sales.

APPENDICES A AND B

Learning Objective 8

LO6–8 Record inventory transactions using a periodic inventory system.

Periodic Inventory System

- Does not continually modify inventory amounts
- Periodically adjust for purchases and sales of inventory
  - At the end of the reporting period
  - Based on a physical count of inventory on hand

Illustration 6–23

Inventory Transactions for Mario's Game Shop

Date	Transaction	Details	Total Cost	Total Revenue
Jan. 1	Beg. inventory	100 units for $7 each	$ 700	
Apr. 25	Purchase	300 units for $9 each	2,700	
Jul. 17	Sale	300 units for $15 each		$ 4,500
Oct. 19	Purchase	600 units for $11 each	6,600	
Dec. 15	Sale	500 units for $15 each		7,500
	Totals		$10,000	$12,000

Inventory Purchases and Sales—Side-by-Side Comparisons between the Perpetual System and Periodic System

- Purchase inventory on account

Perpetual System			Periodic System		
Inventory	2,700		Purchases.....	2,700	
Accounts Payable		2,700	Accounts Payable.....		2,700

- Sell inventory on account

Perpetual System			Periodic System		
Accounts Receivable.....	4,500		Accounts Receivable.....	4,500	
Sales Revenue.....		4,500	Sales Revenue.....		4,500
Cost of Goods Sold	2,500				
Inventory.....		2,500	No entry for cost of goods sold		

Freight Charges, Purchase Discounts, and Returns—Side-by-Side Comparisons Between the Perpetual System and Periodic System

- Pay freight-in charges

Perpetual System			Periodic System		
Inventory	300		Freight-in	300	
Cash		300	Cash		300

- Pay on account with a 2 percent purchase discount of $54; return inventory previously purchased on account

Perpetual System			Periodic System		
Accounts Payable	2,700		Accounts Payable	2,700	
Inventory		54	Purchase Discounts		54
Cash		2,646	Cash		2,646

Perpetual System			Periodic System		
Accounts Payable	550		Accounts Payable	550	
Inventory		550	Purchase Returns		550

Period-End Adjusting Entry

- Needed only under the periodic system

Perpetual System	Periodic System		
No entry	Inventory (ending) ……	1,650	
	Cost of Goods Sold ……	8,046	
	Purchase Discounts……	54	
	Purchase Returns……	550	
	Purchases……		9,300
	Freight-in ……		300
	Inventory (beginning)…		700

Temporary accounts closed

Period-end adjusting entry under the periodic system:

1. Adjusts the balance of inventory to its proper ending balance
2. Records the cost of goods sold for the period
3. Closes (or zeros out) the temporary purchases accounts

Illustration 6–24

Calculation of Gross Profit in a Multiple-Step Income Statement

MARIO'S GAME SHOP
Multiple-Step Income Statement (partial)
For the year ended December 31, 2024

Sales revenue		$12,000
Cost of goods sold:		
Beginning inventory	$ 700	
Add: Purchases	9,300	
Freight-in	300	
Less: Purchase discounts	(54)	
Purchase returns	(550)	
Cost of goods available for sale	9,696	
Less: Ending inventory	(1,650)	
Cost of goods sold		8,046
Gross profit		$ 3,954

Concept Check 6–13

When a periodic inventory system and the FIFO method are used, which of the following is correct?

a. The inventory account will be continuously updated.

b. The amount of cost of goods sold will be the same under a perpetual system and the FIFO method.

c. The cost of goods sold account will be debited for the cost of each sale made.

d. The amount of ending inventory will be larger under a perpetual system and the FIFO method.

The periodic system and perpetual system will always produce the same amount for cost of goods sold (and ending inventory) when FIFO is used. (A periodic system does not maintain a continuously updated inventory account nor a continuously updated cost of goods sold account.)

Key Point

- Using the periodic inventory system, we record purchases, freight-in, purchase returns, and purchase discounts to temporary accounts rather than directly to Inventory.
- These temporary accounts are closed in a period-end adjusting entry.
- In addition, at the time inventory is sold, we do not record a decrease in inventory sold; instead, we update the balance of Inventory in the period-end adjusting entry.

Learning Objective 9

LO6–9 Determine the financial statement effects of inventory errors.

Illustration 6–25

Calculation of Cost of Goods Sold

	Beginning Inventory		
+	Purchases		
–	Ending Inventory	→	Asset; Balance sheet
	Cost of Goods Sold	→	Expense; Income statement

Illustration 6–26

Summary of Effects of Inventory Error in the Current Year

Inventory Error	Cost of Goods Sold	Gross Profit	Net Income	Retained Earnings
Overstate ending inventory	Understate	Overstate	Overstate	Overstate
Understate ending inventory	Overstate	Understate	Understate	Understate

Illustration 6–27

Relationship between Cost of Goods Sold in the Current Year and the Following Year

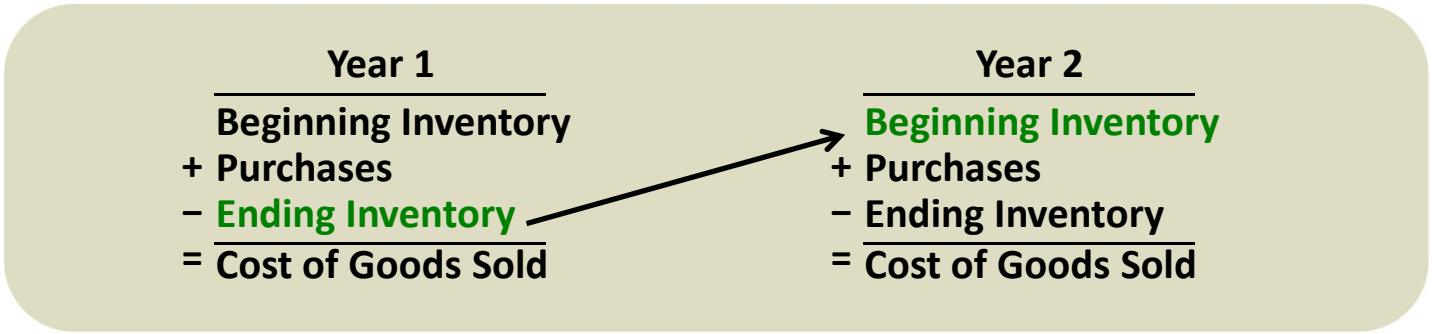


Illustration 6–28
Correct Inventory Amounts

			2024		2025
	Beginning Inventory		$ 600		$ 500
+	Purchases	+	3,000	+	4,000
–	Ending Inventory	–	500	–	800
	Cost of Goods Sold		$3,100		$ 3,700

$6,800

Illustration 6–29
Incorrect Inventory Amounts

			2024		2025
	Beginning Inventory		$ 600		$ 400
+	Purchases	+	3,000	+	4,000
–	Ending Inventory	–	400	–	800
	Cost of Goods Sold		$3,200		$ 3,600

$6,800

Concept Check 6–14

An inventory error that understates the amount of ending inventory will result in which of the following in the current year?

a. Overstated cost of goods sold
b. Overstated net income
c. Overstated assets
d. Overstated gross profit

An understatement of ending inventory will lead to a higher, or overstated, cost of goods sold, an understatement of net income, and an understatement in assets in the year the error was made.

Key Point

- In the current year, inventory errors affect the amounts reported for inventory and retained earnings in the balance sheet and amounts reported for cost of goods sold and gross profit in the income statement.
- At the end of the following year, the error has no effect on ending inventory or retained earnings but reverses for cost of goods sold and gross profit.

End of Chapter 6