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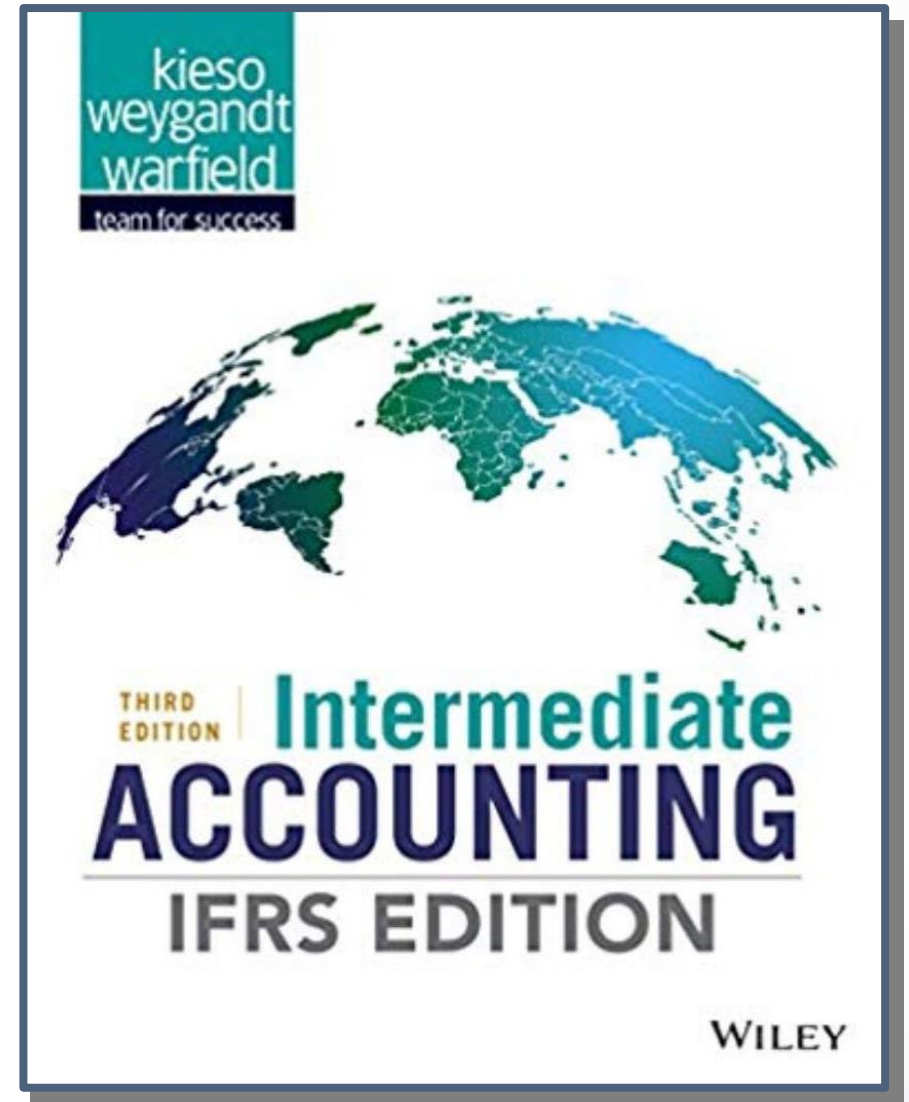
American University Of The Middle East

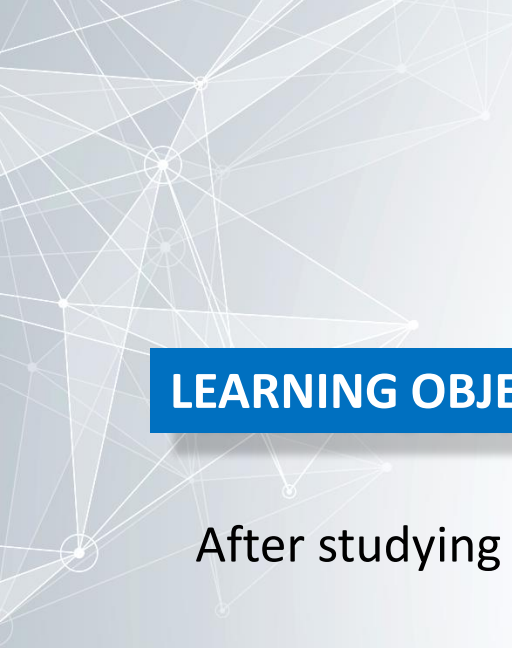
Intermediate Accounting I

CHAPTER 8

Valuation of Inventories: A Cost- Basis Approach

Page 8-1 to 8-16





LEARNING OBJECTIVES

After studying Chapter 8, you should be able to:

1. Describe **inventory classifications** and different **inventory systems**.
2. Identify the **goods** and **costs included** in **inventory**.
3. Compare the **cost flow assumptions** used to account for inventories

LEARNING OBJECTIVE 1: Describe inventory classifications and different inventory systems.

Classification

Inventories are assets:

- ◆ items held for sale in the ordinary course of business, or
- ◆ goods to be used in the production of goods to be sold.

Businesses with Inventory

**Merchandising
Company**

or

**Manufacturing
Company**

LEARNING OBJECTIVE 1: Describe inventory classifications and different inventory systems.

Classification

- ◆ One inventory account.
- ◆ Purchase merchandise in a form ready for sale.
- ◆ Inventory reported under current assets

Merchandising Company	
	Carrefour
Statement of Financial Position (Balance Sheet)	
Current assets (in millions)	
Inventories	€ 6,213
Trade receivables	2,260
Consumer credit from financial companies—short term	3,420
Tax receivables	1,136
Other receivables	853
Current financial assets	504
Cash and cash equivalents	3,114
Total current assets	<u>€17,500</u>

LEARNING OBJECTIVE 1: Describe inventory classifications and different inventory systems.

Classification

Three accounts

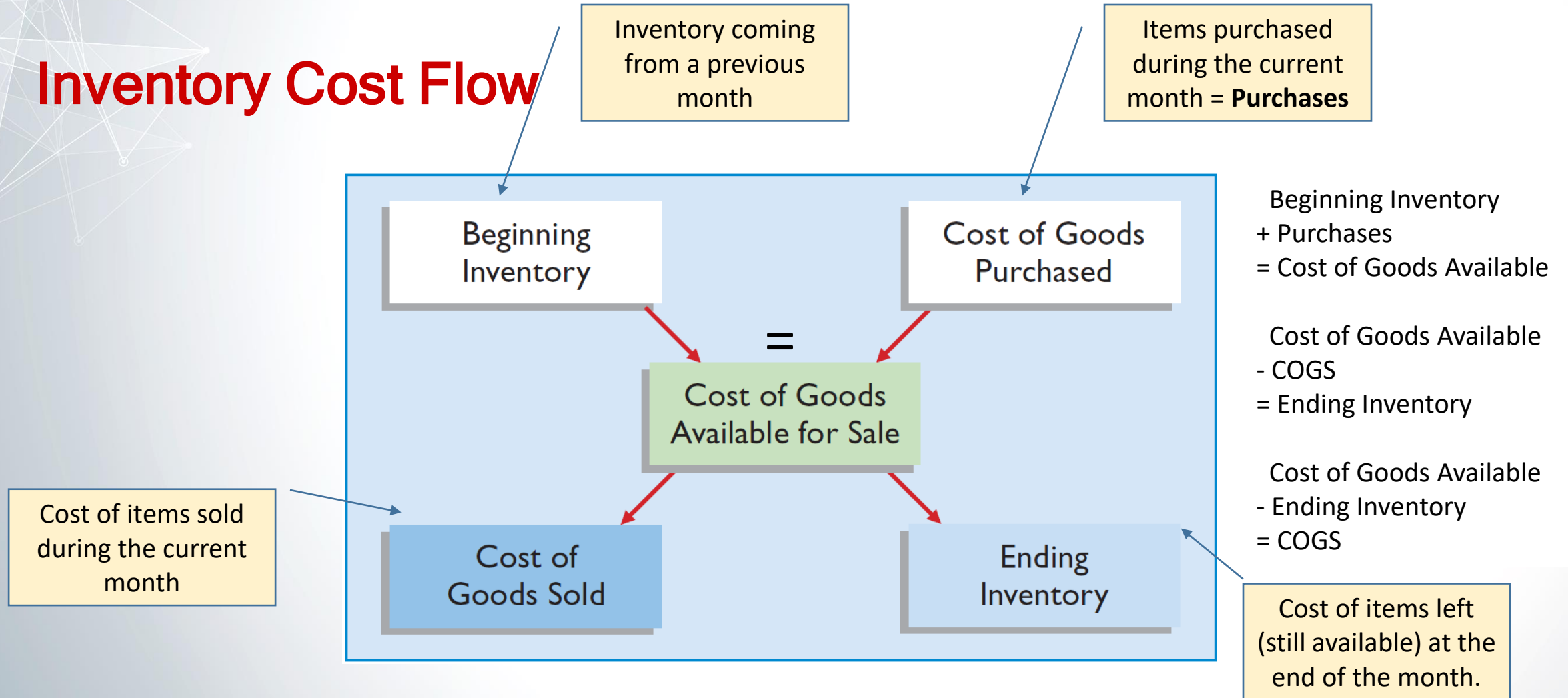
- ◆ Raw Materials
- ◆ Work in Process
- ◆ Finished Goods

All three reported under **current assets**

	Manufacturing Company	
	Nissan	
	Statement of Financial Position (Balance Sheet)	
	December 31, 2015	
	Current assets (in millions)	
	Cash on hand and in banks	¥ 918,771
	Trade notes and accounts receivable	837,704
	Sales finance receivables	6,653,237
	Securities	73,384
	Merchandise and finished goods	857,818
	Work in process	86,313
	Raw materials and supplies	330,435
	Deferred tax assets	251,689
	Other	825,080
	Allowance for doubtful accounts	(86,858)
	Total current assets	<u>¥10,747,573</u>

LEARNING OBJECTIVE 1: Describe inventory classifications and different inventory systems.

Inventory Cost Flow



Two types of systems for maintaining inventory records – perpetual system or periodic system.

Inventory Cost Flow

Perpetual System

- ▶ Purchases of merchandise are debited directly to **Inventory**.
- ▶ Freight-in is debited to **Inventory**.
- ▶ Purchase returns and allowances and purchase discounts are credited to **Inventory**.
- ▶ After each sale COGS is debited and **Inventory** is credited.
- ▶ Subsidiary records show quantity and cost of each type of inventory on hand.

The perpetual inventory system provides a **continuous** record of the **balance** in both the **Inventory** and **Cost of Goods Sold** accounts.

PERPETUAL SYSTEM

Assume there was a beginning inventory of \$500

July 10: Purchased \$1,000 of inventory on account, terms 2/10, n/30.

Inventory	1,000	
A/P		1,000

July 10: Paid in cash \$200 for Freight costs.

Inventory	200	
Cash		200

July 15: Returns \$500 of inventory purchased earlier

A/P	500	
Inventory		500

July 19: Paid for inventory purchased on July 10. 2% discount is applied.

$1,000 - 500 = 500$. Discount = $500 * 2\% = 10$. Payment = $500 - 10 = 490$

A/P	500	
Cash		490
Inventory	10	

July 21: Sold on account inventory costing \$300, for a price of \$750.

A/R	750	
Sales		750
COGS	300	
Inventory		300

Inventory

Beginning.	500	
	1000	
	200	
		500
		10
		300
	890	

COGS

	300	
	300	

Inventory Cost Flow

Periodic System

- ▶ Purchases of merchandise are debited to “Purchases”.
- ▶ After each sale no entry is made to reflect the outflow of inventory
- ▶ **Ending Inventory** determined by **physical count**.

- ▶ Calculation of **Cost of Goods Sold**:

Beginning inventory	\$ 500
+ Purchases (Net)	<u>+ 690</u>
= Goods available for sale	1,190
- Ending inventory	<u>- 890</u>
= Cost of goods sold	<u><u>\$ 300</u></u>

PERIODIC SYSTEM

Assume there was a beginning inventory of \$500

July 10: Purchased \$1,000 of inventory on account, terms 2/10, n/30.

Purchases	1,000	
A/P		1,000

July 10: Paid in cash \$200 for Freight costs.

Freight-in (Expense)	200	
Cash		200

July 15: Returns \$500 of inventory purchased earlier

A/P	500	
Purchase Returns & Allowances		500

July 19: Paid for inventory purchased on July 10. 2% discount is applied.

$1,000 - 500 = 500$. Discount = $500 * 2\% = 10$. Payment = $500 - 10 = 490$

A/P	500	
Cash		490
Purchase Discounts		10

July 21: Sold on account inventory costing \$300, for a price of \$750.

A/R	750	
Sales		750

Inventory

Beginning	500

Purchases

1,000

Purchase Returns

500

Freight-In

200

Purchase Discounts

10

LEARNING OBJECTIVE 2: Identify the goods and costs included in inventory.

Goods Included in Inventory

- ▶ IFRS requires that a company **reports** as inventory only those items (merchandise, material, or finished goods) that it actually controls (owns).
- ▶ **Legal title (ownership)** is often used to determine if there is control, because the rights and obligations are established legally.

In the following slides we discuss some specific situations related to ownership and control

LEARNING OBJECTIVE 2: Identify the goods and costs included in inventory.

Goods in Transit

Example: LG (KOR) determines ownership by applying the “passage of title” rule.

- ▶ If a supplier ships goods to LG **F.O.B. shipping point**, title passes to LG when the supplier delivers the goods to the common carrier, who acts as an agent for LG.
- ▶ If the supplier ships the goods **F.O.B. destination**, title passes to LG only when it receives the goods from the common carrier.

Who should report goods in transit?

Under **F.O.B. shipping point** terms Goods in Transit are included in the buyer's inventory

Under **F.O.B. destination** terms Goods in Transit are included in the seller's inventory

Consigned Goods (Goods on consignment)

Example: Williams Art Gallery (the consignor) ships various art merchandise to Sotheby's Holdings (USA) (the consignee), who acts as Williams' agent in selling the consigned goods.

- ▶ Sotheby's agrees to accept the goods without any liability, except to exercise due care and reasonable protection from loss or damage, until it sells the goods to a third party.
- ▶ When Sotheby's sells the goods, it remits the revenue, less a selling commission and expenses incurred, to Williams.

Who should report consigned goods?

Goods out on consignment remain the property of the consignor (Williams).

Consigned Goods are included in the **consignor's (seller) inventory**.

Sales with Repurchase Agreements

Example: Hill Enterprises transfers (“sells”) inventory to Chase, Inc. for \$100,000 and at the same time agrees to repurchase this merchandise 1 year later price over a specified period of time. Chase then uses the inventory as collateral and borrows against it.

- ▶ In essence this is a **financing** transaction. Hill Enterprises is not actually selling inventory, instead it is using inventory as collateral for borrowing money from Chase.

Who should report goods in such a situation?

Inventory sold under a **Repurchase Agreement** should be reported by the **seller**.

LEARNING OBJECTIVE 2: Identify the goods and costs included in inventory.

Sales with Rights of Return

Example: Quality Publishing Company sells textbooks to Campus Bookstores with an agreement that Campus may return for full credit any books not sold. Quality Publishing should recognize

Who should report goods in such a situation?

- ▶ Inventory that is reasonably expected **NOT** to be **returned** should be reported by the **buyer**.
- ▶ Inventory that is expected to be **returned** should be reported by the **seller**.
- ▶ If estimates of the level of returns can not be made, all inventory should be reported by the seller (until the returns can be estimated reliably)

LEARNING OBJECTIVE 2: Identify the goods and costs included in inventory.

Product v. Period Costs

Costs **directly** connected with bringing the goods to the buyer's place of business and making them ready for sale are considered **product costs**.

Product costs includes all of the following:

- ▶ The purchase price (Less: Purchase Returns & Allowances and Purchase Discounts)
- ▶ Import duties and other taxes.
- ▶ Transportation costs.
- ▶ Handling costs directly related to the acquisition of the goods.

Costs that are **indirectly** related to the acquisition or production of goods are considered **period costs**.

Such costs are classified as either **selling expenses** or **administrative expenses** and are **not included** as part of inventory cost.

Cost Flow Methods

- ▶ **Specific Identification**
or
- ▶ **First-in, First-out (FIFO)**
- ▶ **Last-in, First-out (LIFO) (not used under IFRS)**
- ▶ **Average Cost**

LEARNING OBJECTIVE 3: Compare the **cost flow assumptions** used to account for inventories

Cost Flow Methods - Illustration

To illustrate the cost flow methods, assume that Call-Mart SpA had the following transactions in its first month of operations.

<u>Date</u>	<u>Purchases</u>	<u>Sold or Issued</u>	<u>Balance</u>
March 2	2,000 @ €4.00		2,000 units
March 15	6,000 @ €4.40		8,000 units
March 19		4,000 units	4,000 units
March 30	2,000 @ €4.75		6,000 units

Calculate Goods Available for Sale

Beginning inventory (2,000 x €4)	€ 8,000
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Purchases:

6,000 x €4.40	26,400
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2,000 x €4.75	9,500
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Goods available for sale	<u>€43,900</u>
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LEARNING OBJECTIVE 3: Compare the **cost flow assumptions** used to account for inventories

Specific Identification

- ▶ Method may be used only in instances where it is practical to separate physically the different purchases made. Cost of goods sold includes costs of the specific items sold.
- ▶ Used when handling a relatively small number of costly, easily distinguishable items.
- ▶ Matches actual costs against actual revenue.
- ▶ Cost flow matches the physical flow of the goods.
- ▶ May allow a company to manipulate net income.

LEARNING OBJECTIVE 3: Compare the **cost flow assumptions** used to account for inventories

Specific Identification

Illustration: Call-Mart Inc.'s 6,000 units of inventory consists of 1,000 units from the March 2 purchase, 3,000 from the March 15 purchase, and 2,000 from the March 30 purchase. Compute the amount of ending inventory and cost of goods sold.

<u>Date</u>	<u>No. of Units</u>	<u>Unit Cost</u>	<u>Total Cost</u>
March 2	1,000	€4.00	€ 4,000
March 15	3,000	4.40	13,200
March 30	2,000	4.75	9,500
Ending inventory	<u>6,000</u>		<u>€26,700</u>
Cost of goods available for sale (computed in previous section)		€43,900	
Deduct: Ending inventory		<u>26,700</u>	
Cost of goods sold		<u>€17,200</u>	

LEARNING OBJECTIVE 3: Compare the cost flow assumptions used to account for inventories

Average-Cost - Periodic

- Prices items in the inventory on the basis of the **average cost** of all similar goods available during the period.

Average unit cost =
Cost of goods Available for Sale / Total
units available

Periodic Inventory System

<u>Date of Invoice</u>	<u>No. Units</u>	<u>Unit Cost</u>	<u>Total Cost</u>
March 2	2,000	€4.00	€ 8,000
March 15	6,000	4.40	26,400
March 30	2,000	4.75	9,500
Total goods available	<u>10,000</u>		<u>€43,900</u>
Weighted-average cost per unit $\frac{€43,900}{10,000} = €4.39$			
Inventory in units	6,000 units		
Ending inventory	$6,000 \times €4.39 = €26,340$		
Cost of goods available for sale			€43,900
Deduct: Ending inventory			<u>26,340</u>
Cost of goods sold			<u>€17,560</u>

LEARNING OBJECTIVE 3: Compare the cost flow assumptions used to account for inventories

Moving Average - Perpetual

Perpetual Inventory System

Date	Purchased		Sold or Issued	Balance	
March 2	(2,000 @ €4.00)	€ 8,000		(2,000 @ €4.00)	€ 8,000
March 15	(6,000 @ 4.40)	26,400		(8,000 @ 4.30)	34,400
March 19			(4,000 @ €4.30)		
			€17,200	(4,000 @ 4.30)	17,200
March 30	(2,000 @ 4.75)	9,500		(6,000 @ 4.45)	26,700

In this method, Call-Mart computes a **new average unit cost** each time it makes a purchase.

LEARNING OBJECTIVE 3: Compare the cost flow assumptions used to account for inventories

First-In, First-Out (FIFO) - Periodic

- ▶ Assumes goods are used in the order in which they are purchased.
- ▶ Inventory at hand at the end of the period is comprised of the most recent purchases

Periodic Inventory System

<u>Date</u>	<u>No. Units</u>	<u>Unit Cost</u>	<u>Total Cost</u>
March 30	2,000	€4.75	€ 9,500
March 15	4,000	4.40	17,600
Ending inventory	<u>6,000</u>		<u>€27,100</u>
Cost of goods available for sale		€43,900	
Deduct: Ending inventory		<u>27,100</u>	
Cost of goods sold		<u>€16,800</u>	

LEARNING OBJECTIVE 3: Compare the cost flow assumptions used to account for inventories

First-In, First-Out (FIFO) - Perpetual

Perpetual Inventory System

Date	Purchased		Sold or Issued	Balance	
March 2	(2,000 @ €4.00)	€ 8,000		2,000 @ €4.00	€ 8,000
March 15	(6,000 @ 4.40)	26,400		2,000 @ 4.00 6,000 @ 4.40	} 34,400
March 19			2,000 @ €4.00 2,000 @ 4.40 (€16,800)	4,000 @ 4.40	
March 30	(2,000 @ 4.75)	9,500		4,000 @ 4.40 2,000 @ 4.75	} 27,100

Ending inventory cost and COGS determined using FIFO assumption is the same under both perpetual and periodic inventory systems.

***E8-17 (FIFO and LIFO—Periodic and Perpetual)** Inventory information for Part 311 of Seminole Corp. discloses the following information for the month of June.

June 1	Balance	300 units @ \$10	June 10	Sold	200 units @ \$24
11	Purchased	800 units @ \$11	15	Sold	500 units @ \$25
20	Purchased	500 units @ \$13	27	Sold	250 units @ \$27

Instructions

- (a) Assuming that the periodic inventory method is used, compute the cost of goods sold and ending inventory under (1) LIFO and (2) FIFO.
- (b) Assuming that the perpetual inventory method is used and costs are computed at the time of each withdrawal, what is the value of the ending inventory at LIFO?
- (c) Assuming that the perpetual inventory method is used and costs are computed at the time of each withdrawal, what is the gross profit if the inventory is valued at FIFO?
- (d) Why is it stated that LIFO usually produces a lower gross profit than FIFO?

***E8-18 (FIFO, LIFO, and Average-Cost Determination)** Keyser Company's record of transactions for the month of April is shown on page 386.

Purchases			Sales		
April	1 (balance on hand)	600 @ \$6.00	April	3	500 @ \$10.00
	4	1,500 @ 6.08		9	1,300 @ 10.00
	8	800 @ 6.40		11	600 @ 11.00
	13	1,200 @ 6.50		23	1,200 @ 11.00
	21	700 @ 6.60		27	900 @ 12.00
	29	500 @ 6.79			<u>4,500</u>
		<u>5,300</u>			

Instructions

- Assuming that periodic inventory records are kept, compute the inventory at April 30 using (1) LIFO and (2) average-cost.
- Assuming that perpetual inventory records are kept in both units and dollars, determine the inventory at April 30 using (1) FIFO and (2) LIFO.
- Compute cost of goods sold assuming periodic inventory procedures and inventory priced at FIFO.
- In an inflationary period, which inventory method—FIFO, LIFO, or average-cost—will show the highest net income?

***E8-23 (FIFO and LIFO—Periodic)** Tom Brady Shop began operations on January 2, 2015. The following stock record card for footballs was taken from the records at the end of the year.

Date	Voucher	Terms	Units Received	Unit Invoice Cost	Gross Invoice Amount
1/15	10624	Net 30	50	\$20	\$1,000
3/15	11437	1/5, net 30	65	16	1,040
6/20	21332	1/10, net 30	90	15	1,350
9/12	27644	1/10, net 30	84	12	1,008
11/24	31269	1/10, net 30	76	11	836
	Totals		<u>365</u>		<u>\$5,234</u>

A physical inventory on December 31, 2015, reveals that 110 footballs were in stock. The bookkeeper informs you that all the discounts were taken. Assume that Tom Brady Shop uses the invoice price less discount for recording purchases.

Instructions

- Compute the December 31, 2015, inventory using the FIFO method. (Round all unit costs to two decimal places.)
- Compute the 2015 cost of goods sold using the LIFO method.
- What method would you recommend to the owner to minimize income taxes in 2015, using the inventory information for footballs as a guide?

E8.12 (LO3) (FIFO and Average-Cost, Income Statement Presentation) The board of directors of Oksana ASA is considering whether or not it should instruct the accounting department to change from a first-in, first-out (FIFO) basis of pricing inventories to an average-cost basis. The following information is available.

Sales	20,000	units	@	€50
Inventory, January 1	6,000	units	@	20
Purchases	6,000	units	@	22
	10,000	units	@	25
	7,000	units	@	30
Inventory, December 31	9,000	units	@	?
Operating expenses	€200,000			

Instructions

Prepare a condensed income statement for the year on both bases for comparative purposes (round to two decimal places).