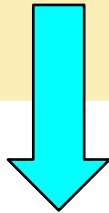


CHAPTER ONE

INVENTORY



Applicable Standards

1. **IAS 2 - *Inventories* represent:**
 - **Assets *held for sale* in the ordinary course of business,**
 - **In the *process of production* for such sale or**
 - **In the form of *material* or *supplies to be consumed*:**
 - **In the *production process*, or**
 - **In the *rendering of services*.**

Applicable Standards(Continued)

IAS 38 - **Inventory** may include *intangible assets that are being developed for resale*, for example, software.

3. IAS 40 - Inventory also includes *properties that have been purchased, or are being developed, for resale*.

4. IAS 41 - *Agricultural produce from the point of harvest* is classified as inventory.

Basic Concepts & Terminologies

- ***Fair Value*** - the *amount* for which an asset could be exchanged, or a liability settled, b/n *knowledgeable, willing parties* in an arm's length transaction.
- ***Net Realizable Value*** - the *amount* that is expected to be realized from the *sale of inventory* in the ordinary course of business *less the estimated costs of completion & sale. OR*
- **Net realizable value** is defined as the estimated selling price less the costs necessary to make the sale.

Categories of Inventory

- ***Raw Materials***- are materials:
 - ✓ Which are actually used in the FG, and/or
 - ✓ Awaiting entry into the production process.
- ***Work In Progress*** -The inventory of partially completed products.
- ***Finished Goods*** - Completed manufactured goods that have not yet been sold.
- ***Packaging Material***- Materials consumed for the packaging of the FG; such as Sacks & Bags.

Categories of Inventory

(Continued)

- ***Spare Parts, Tools & Consumables-*** machine parts that are used to replace obsolete or non-useful machine parts, tools and consumables.
- ***Promotional & Advertising Materials***
 - ↓ ***If the ff prerequisites are met, the promotional materials can be recorded as inventory:***
 - I.** Materials are **not delivered** to the end-consumer.
 - II.** Materials are directly **linked to sales** transaction.
 - III.** Materials have a **significant value** individually.

Exclusions

□ The ff items shall be excluded from the inventories of the Company:

- ✓ Goods sold and awaiting delivery.
- ✓ Goods delivered and awaiting billing.
- ✓ Non-returnable packaging containers, or stationery, when their total value is not significant.
- ✓ Major spare parts and stand-by equipment when the entity expects to use them for more than one period (capitalized in fixed assets)

INVENTORY ISSUES

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**

INVENTORY ISSUES

Classification

- ◆ One inventory account.
- ◆ Purchase merchandise in a form ready for sale.

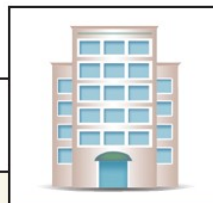


ILLUSTRATION
5-1

Merchandising Company

Carrefour

Statement of Financial Position (Balance Sheet) December 31, 2012

Current assets (in millions)	
Inventories	€ 5,658
Commercial receivables	2,144
Consumer credit from financial companies—short term	3,286
Other current financial assets	352
Tax receivables	520
Other assets	795
Cash and cash equivalents	6,573
Assets held for sale	465
Total current assets	€19,793

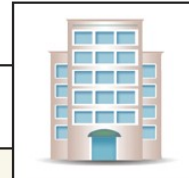
INVENTORY ISSUES

Classification

Three accounts

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

ILLUSTRATION 5-1



Manufacturing Company

CNH Global

Statement of Financial Position (Balance Sheet) December 31, 2012

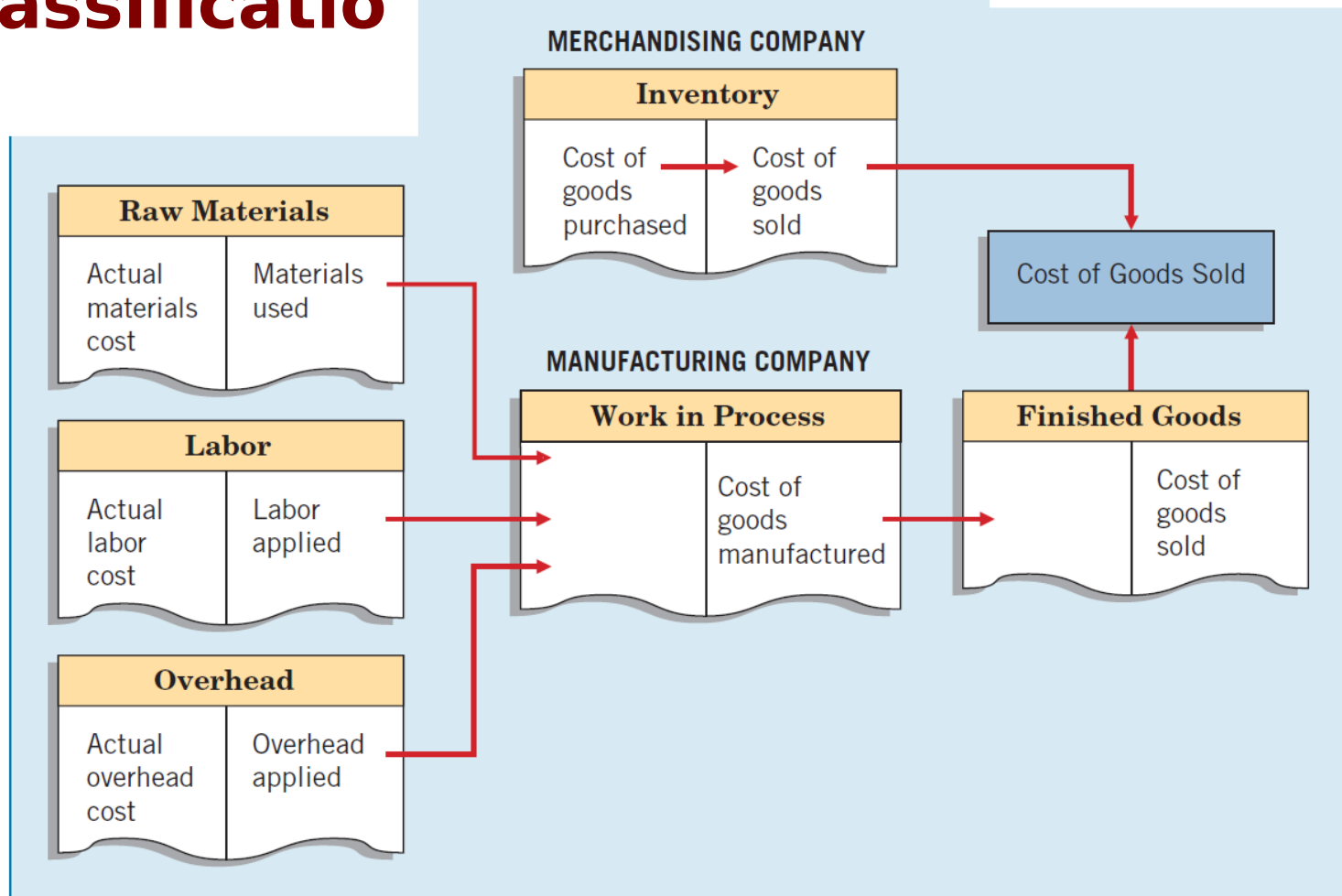
Current assets (in millions)	
Cash and cash equivalents	\$ 2,008
Restricted cash	885
Deposits in Fiat affiliates cash management pools	4,232
Accounts and notes receivable, net	9,514
Inventories	
Raw materials	\$1,027
Work in process	226
Finished goods	<u>2,481</u>
Total inventories	3,734
Deferred income taxes	659
Prepayments and other	<u>560</u>
Total current assets	<u><u>\$21,592</u></u>

INVENTORY ISSUES

ILLUSTRATION 5-2

Flow of Costs through
Manufacturing and
Merchandising
Companies

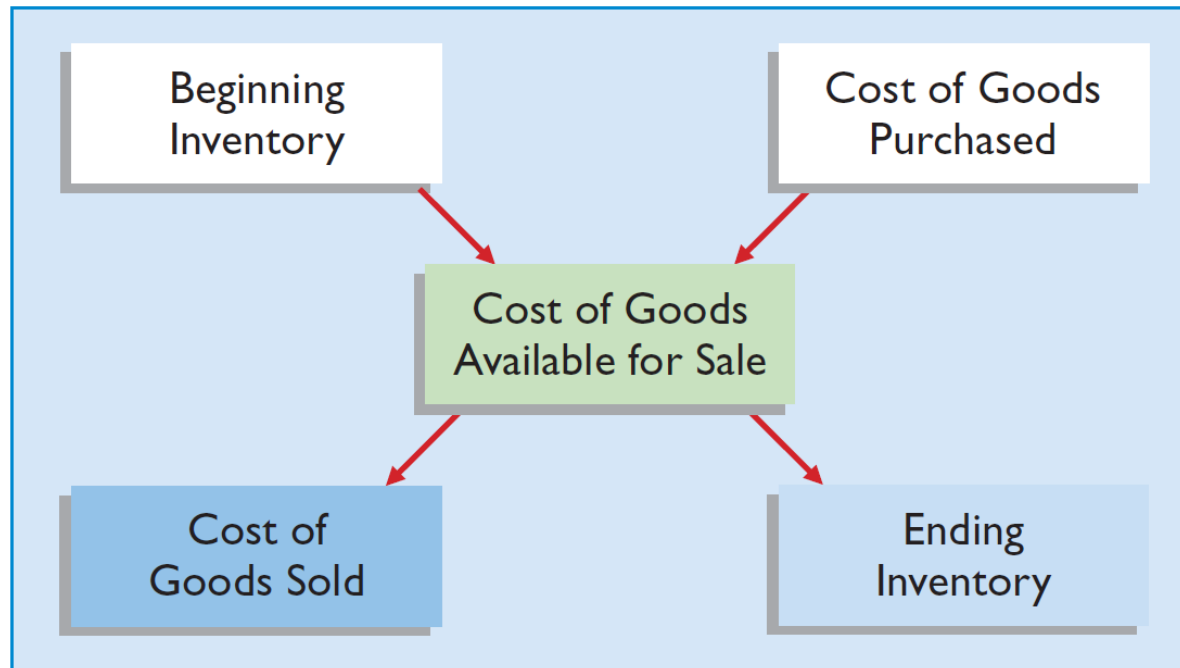
Classification



INVENTORY ISSUES

Inventory Cost Flow

ILLUSTRATION 5-3



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

Inventory Cost Flow

Perpetual System

1. Purchases of merchandise are debited to Inventory.
2. Freight-in is debited to Inventory. Purchase returns and allowances and purchase discounts are credited to Inventory.
3. Cost of goods sold is debited and Inventory is credited for each sale.
4. 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.

Inventory Cost Flow

Periodic System

1. Purchases of merchandise are debited to Purchases.
2. Ending Inventory determined by physical count.
3. Calculation of Cost of Goods Sold:

Beginning inventory	\$ 100,000	
Purchases, net	+ 800,000	<u> </u>
Goods available for sale	900,000	
Ending inventory -	125,000	<u> </u>
Cost of goods sold	\$ 775,000	<u><u> </u></u>

Inventory Cost Flow

Comparing Perpetual and Periodic Systems

Illustration: Fesmire Company had the following transactions during the current year.

Beginning inventory	100 units at \$6	= \$600
Purchases	900 units at \$6	= \$5,400
Sales	600 units at \$12	= \$7,200
Ending inventory	400 units at \$6	= \$2,400

Record these transactions using the **Perpetual** and **Periodic** systems.

Inventory Cost Flow

ILLUSTRATION 5-4 Comparative Entries

Perpetual vs.
Periodic

Perpetual Inventory System

Periodic Inventory

Beginning inventory, 100 units at \$6

The Inventory account shows the inventory on hand at \$600.

The Inventory account shows the inventory on hand at \$600.

Purchase 900 units at \$6

Sale of 600 units at \$12

End-of-period entries for inventory accounts, 400 units at \$6

Inventory Cost Flow

Illustration: Assume that at the end of the reporting period, the perpetual inventory account reported an inventory balance of \$4,000. However, a physical count indicates inventory of \$3,800 is actually on hand. The entry to record the necessary write-down is as follows.

Inventory Over and Short	200
Inventory	200

Note: Inventory Over and Short adjusts Cost of Goods Sold. In practice, companies sometimes report Inventory Over and Short in the “Other income and expense” section of the income statement.

INVENTORY ISSUES

Inventory Control

All companies need periodic verification of the inventory records

- ◆ by actual count, weight, or measurement, with
- ◆ counts compared with detailed inventory records.

Companies should take the **physical inventory**

- ◆ near the end of their fiscal year,
- ◆ to properly report inventory quantities in their annual accounting reports.

INVENTORY ISSUES

Basic Issues in Inventory Valuation

Companies must allocate the cost of all the goods available for sale (or use) between the goods that were sold or used and those that are still on hand.

Beginning inventory, Jan. 1	\$100,000
Cost of goods acquired or produced during the year	<u>800,000</u>
Total cost of goods available for sale	900,000
Ending inventory, Dec. 31	<u>200,000</u>
Cost of goods sold during the year	<u><u>\$700,000</u></u>

ILLUSTRATION

5-5

Computation of
Cost
of Goods Sold

Basic Issues in Inventory Valuation

Valuing inventories requires determining

- 1. The physical goods to include in inventory**
(who owns the goods?—goods in transit, consigned goods, special sales agreements).
- 2. The costs to include in inventory** (product vs. period costs).
- 3. The cost flow assumption to adopt** (specific identification, average-cost, FIFO, retail, etc.).

PHYSICAL GOODS INCLUDED IN INVENTORY

A company should **record inventory** when it obtains **legal title** to the goods.

General Rule

Inventory is buyer's when received, except:

FOB shipping point — Buyer's at time of delivery to common carrier

Consignment goods — Seller's, not buyer's

Sales with repurchase — Seller's, not buyer's

Sales with rights of return — Buyer's, if you can estimate returns

ILLUSTRATION 5-6

Guidelines for Determining Ownership

GOODS 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.

“Shipping point” and “destination” are often designated by a particular location, for example, f.o.b. Seoul.

GOODS INCLUDED IN INVENTORY

Consigned Goods

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.

GOODS INCLUDED IN INVENTORY

Sales with Repurchase Agreements

Example: Hill Enterprises transfers (“sells”) inventory to Chase, Inc. and simultaneously agrees to repurchase this merchandise at a specified price over a specified period of time. Chase then uses the inventory as collateral and borrows against it.

- ◆ Essence of transaction is that Hill Enterprises is financing its inventory—and retains control of the inventory—even though it transferred to Chase technical legal title to the merchandise.
- ◆ Often described in practice as a “**parking transaction.**”
- ◆ Hill should report the inventory and related liability on

GOODS 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

- a) Revenue from the textbooks sold that it expects will not be returned.
- b) A refund liability for the estimated books to be returned.
- c) An asset for the books estimated to be returned which reduces the cost of goods sold.

If Quality Publishing is unable to estimate the level of returns, it should not report any revenue until the returns become predictable.

GOODS INCLUDED IN INVENTORY

Effect of Inventory Errors

Ending Inventory Misstated

ILLUSTRATION 5-7
Financial
Statement
Effects of Misstated

Statement of Financial Position		Income Statement	
Inventory	Understated	Cost of goods sold	Overstated
Retained earnings	Understated		
Working capital	Understated	Net income	Understated
Current ratio	Understated		

The effect of an error on net income in one year will be counterbalanced in the next, however the income statement will be misstated for both years.

Ending Inventory Misstated

Illustration: Yei Chen Corp. understates its ending inventory by HK\$10,000 in 2015; all other items are correctly stated.

ILLUSTRATION 5-8
Effect of Ending Inventory Error on Two Periods

YEI CHEN CORP. (IN THOUSANDS)					
	Incorrect Recording			Correct Recording	
	2015	2016		2015	2016
Revenues	HK\$100,000	HK\$100,000		HK\$100,000	HK\$100,000
Cost of goods sold					
Beginning inventory	25,000	20,000	→	25,000	30,000
Purchased or produced	45,000	60,000		45,000	60,000
Goods available for sale	70,000	80,000		70,000	90,000
Less: Ending inventory	20,000*	40,000	←	30,000	40,000
Cost of goods sold	50,000	40,000		40,000	50,000
Gross profit	50,000	60,000		60,000	50,000
Administrative and selling expenses	40,000	40,000		40,000	40,000
Net income	HK\$ 10,000	HK\$ 20,000		HK\$ 20,000	HK\$ 10,000
Total income for two years = HK\$30,000 Total income for two years = HK\$30,000					

*Ending inventory understated by HK\$10,000 in 2015.

GOODS INCLUDED IN INVENTORY

Effect of Inventory Errors

Purchases and Inventory Misstated

ILLUSTRATION 5-9

Financial Statement
Effects of Misstated
Purchases and
Inventory

Statement of Financial Position		Income Statement	
Inventory	Understated	Purchases	Understated
Retained earnings	No effect	Cost of goods sold	No effect
Accounts payable	Understated	Net income	No effect
Working capital	No effect	Inventory (ending)	Understated
Current ratio	Overstated		

The understatement does not affect cost of goods sold and net income because the errors offset one another.

COSTS INCLUDED IN INVENTORY

Product Costs

Costs directly connected with bringing the goods to the buyer's place of business and converting such goods to a salable condition.

Cost of purchase includes all of:

1. The purchase price.
2. Import duties and other taxes.
3. Transportation costs.
4. Handling costs directly related to the acquisition of the goods.

COSTS INCLUDED IN INVENTORY

Period Costs

Costs that are indirectly related to the acquisition or production of goods.

Period costs such as

- ◆ **selling expenses** and,
- ◆ **general and administrative expenses**

are not included as part of inventory cost.

COSTS INCLUDED IN INVENTORY

Treatment of Purchase

Discounts

Purchase or trade discounts are reductions in the selling prices granted to customers.

IASB requires these discounts to be recorded as a reduction from the cost of inventories.

Treatment of Purchase Discounts

Gross Method	Net Method
Purchase cost \$10,000, terms 2/10, net 30	
Invoices of \$4,000 are paid within discount period	
Invoices of \$6,000 are paid after discount period	

ILLUSTRATION 5-11

Entries under Gross and Net Methods

$$* \$4,000 \times 2\% = \$80$$

$$** \$10,000 \times 98\% = \$9,800$$

WHICH COST FLOW ASSUMPTIONS TO ADOPT?

Cost Flow Methods

- ◆ Specific Identification
or
- ◆ **Two cost flow assumptions**
 - ▶ First-in, First-out (FIFO) or
 - ▶ Average Cost

Cost Flow Methods

To illustrate the cost flow methods, assume that Call-Mart Inc. 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

Purchases:

6,000 x €4.40 26,400

2,000 x €4.75 9,500

Goods available for sale €43,900

Cost Flow Methods

Specific Identification

- ◆ **IASB requires** in cases where inventories are not ordinarily interchangeable or for goods and services produced or segregated for specific projects.
- ◆ 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.

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.

ILLUSTRATION 5-12

<u>Date</u>	<u>No. of Units</u>	<u>Unit Cost</u>	<u>Total Cost</u>
March 2	1,000		
March 15	3,000		
March 30	2,000		
Ending inventory	<u>6,000</u>		

Cost of goods available for sale
(computed in previous section)

Deduct:

Cost of goods sold

Cost Flow Assumptions

Average-Cost

- ◆ Prices items in the inventory on the basis of the average cost of all similar goods available during the period.
- ◆ Not as subject to income manipulation.
- ◆ Measuring a specific physical flow of inventory is often impossible.

Average-Cost

Weighted-Average Method

ILLUSTRATION 5-13

Weighted-Average
Method—Periodic
Inventory

<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

	=	

Inventory in units

6,000 units

Ending inventory

6,000 ×

--

Cost of goods available for sale

€43,900

Deduct:

--

Cost of goods sold

Average-Cost

Moving-Average Method

ILLUSTRATION 5-14
Moving-Average Method
—Perpetual Inventory

Date	Purchased	Sold or Issued	Balance
March 2	(2,000 @ €4.00) € 8,000		
March 15	(6,000 @ 4.40) 26,400		
March 19			
March 30	(2,000 @ 4.75) 9,500		

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

Cost Flow Assumptions

First-In, First-Out (FIFO)

- ◆ Assumes goods are used in the order in which they are purchased.
- ◆ Approximates the physical flow of goods.
- ◆ Ending inventory is close to current cost.
- ◆ Fails to match current costs against current revenues on the income statement.

First-In, First-Out (FIFO)

Periodic Inventory System

ILLUSTRATION 5-15
FIFO Method—Periodic Inventory

<u>Date</u>	<u>No. Units</u>	<u>Unit Cost</u>	<u>Total Cost</u>
March 30	2,000		
March 15	4,000		
Ending inventory	6,000		
Cost of goods available for sale		€43,900	
Deduct: Ending inventory			
Cost of goods sold			

Determine cost of ending inventory by taking the cost of the most recent purchase and working back until it accounts for all units in the inventory.

First-In, First-Out (FIFO)

Perpetual Inventory System

ILLUSTRATION 5-16

FIFO Method—
Perpetual
Inventory

Date	Purchased	Sold or Issued	Inventory
March 2	(2,000 @ €4.00) € 8,000		
March 15	(6,000 @ 4.40) 26,400		
March 19			
March 30	(2,000 @ 4.75) 9,500		

In all cases where FIFO is used, the inventory and cost of goods sold would be the **same** at the end of the month **whether a perpetual or periodic system is used.**

Inventory Valuation Methods— Summary

Comparison assumes periodic inventory procedures and the following selected data.

Selected Data

Beginning cash balance		€ 7,000
Beginning retained earnings		€10,000
Beginning inventory:	4,000 units @ €3	€12,000
Purchases:	6,000 units @ €4	€24,000
Sales:	5,000 units @ €12	€60,000
Operating expenses		€10,000
Income tax rate		40%

Inventory Valuation Methods— Summary

	Average- Cost	FIFO
Sales	€60,000	€60,000
Cost of goods sold	<u>18,000^a</u>	<u>16,000^b</u>
Gross profit	42,000	44,000
Operating expenses	<u>10,000</u>	<u>10,000</u>
Income before taxes	32,000	34,000
Income taxes (40%)	<u>12,800</u>	<u>13,600</u>
Net income	<u><u>€19,200</u></u>	<u><u>€20,400</u></u>
	^a 4,000 @ €3 = €12,000 6,000 @ €4 = <u>24,000</u> €36,000 <u>€36,000</u> $€36,000 \div 10,000 = €3.60$ $€3.60 \times 5,000 = \underline{\underline{€18,000}}$	^b 4,000 @ €3 = €12,000 1,000 @ €4 = <u>4,000</u> €16,000 <u>€16,000</u>

ILLUSTRATION 5-17

Comparative Results
of
Average-Cost and
FIFO

Methods

Inventory Valuation Methods— Summary

When prices are rising, average-cost results in the higher cash balance at year-end (because taxes are lower).

	Inventory	Gross Profit	Taxes	Net Income	Retained Earnings	Cash
Average-Cost	€18,000 (5,000 × €3.60)	€42,000	€12,800	€19,200	€29,200 (€10,000 + €19,200)	€20,200 ^a
FIFO	€20,000 (5,000 × €4)	€44,000	€13,600	€20,400	€30,400 (€10,000 + €20,400)	€19,400 ^a
^a Cash at year-end = Beg. Balance + Sales – Purchases – Operating expenses – Taxes Average-cost—€20,200 = €7,000 + €60,000 – €24,000 – €10,000 – €12,800 FIFO—€19,400 = €7,000 + €60,000 – €24,000 – €10,000 – €13,600						

ILLUSTRATION 5-18

Balances of Selected
Items under
Alternative Inventory
Valuation Methods