Chapter: Reporting and Interpreting Cost of Goods Sold and Inventory

Learning Objectives

7-1 Apply the **cost principle** to identify the amounts that should be included in inventory and the expense matching principle to determine cost of goods sold for typical retailers, wholesalers, and manufacturers.

7-2 **Report inventory** and **cost of goods sold** using the four inventory costing methods.

7-3 Decide **when** the **use** of **different inventory costing methods** is beneficial to a company.

7-4 Report inventory at the lower of cost or **net realizable value**

7-5 Understand methods for **controlling inventory** and analyze the effects of inventory errors on financial statements.

7-6 Evaluate inventory management using the **inventory turnover ratio**.

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Nature of Inventory and Cost of Goods Sold

Inventory management is an essential management duty

- **Primary Goals of Inventory Management:**
  - To provide sufficient quantities of high-quality inventory
  - To minimize the costs of carrying inventory
- **What are the costs of inventory?**

Income Statement and Balance Sheet Excerpts

Years Ended December 31,	2014	2013	2012
Net Sales	$5,567,681	$5,258,290	$4,942,582
Cost of Goods Sold	3,542,601	3,395,918	3,222,394
Gross Profit	$2,025,080	$1,862,372	$1,720,188

HARLEY-DAVIDSON, INC.
Consolidated Balance Sheets
(In thousands)*

	2014	2013
Assets		
Current Assets		
Cash and cash equivalents	$ 906,680	$1,066,612
Marketable securities	57,325	99,009
Accounts receivable, net	247,621	261,065
Finance receivables, net	1,916,635	1,773,686
Inventories	448,871	424,507
Deferred income taxes	89,916	103,625
Other current assets	281,047	260,299
Total current assets	$3,948,095	$3,988,803

Inventory is tangible property held for sale in the normal course of business or used in producing goods or services for sale.

Merchandisers

Merchandise Inventory

Manufacturing

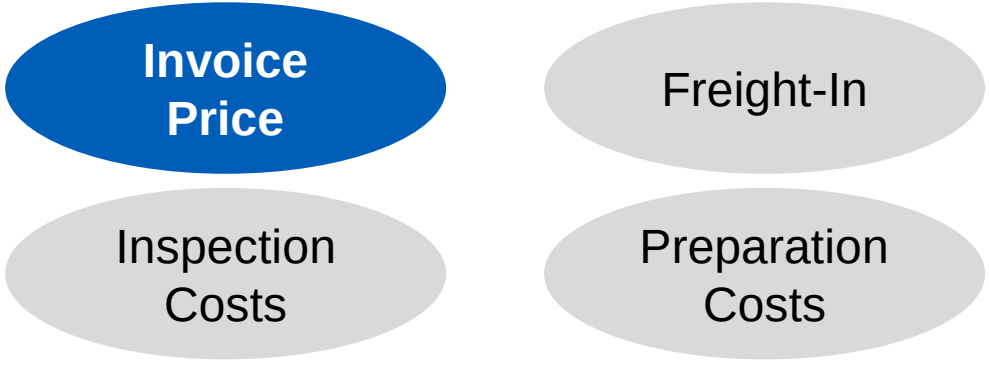
Raw Materials

Work in Process

Finished Goods

Cost principle: Record inventory at the price paid or the consideration given

Inventory cost includes **the costs to bring an article to usable or salable condition and location**.



Any purchase returns and allowances or purchase discounts taken are subtracted.

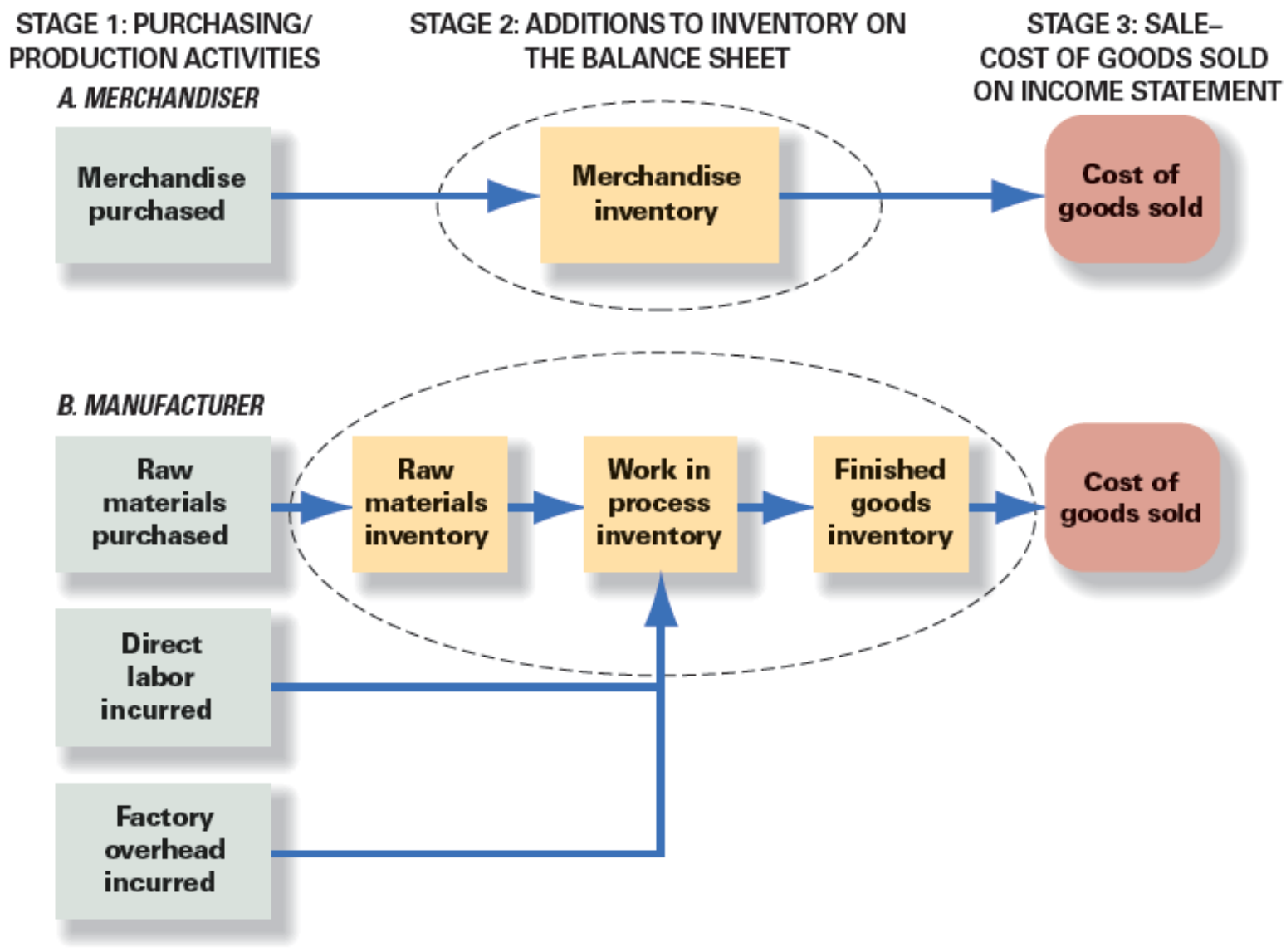
Applying the Materiality Constraint in Practice

Incidental costs, such as inspection and preparation costs, do not have to be assigned to the inventory cost if they are not material. Therefore, many companies record inspection and preparation costs as an expense.

Most companies report inventory cost as:

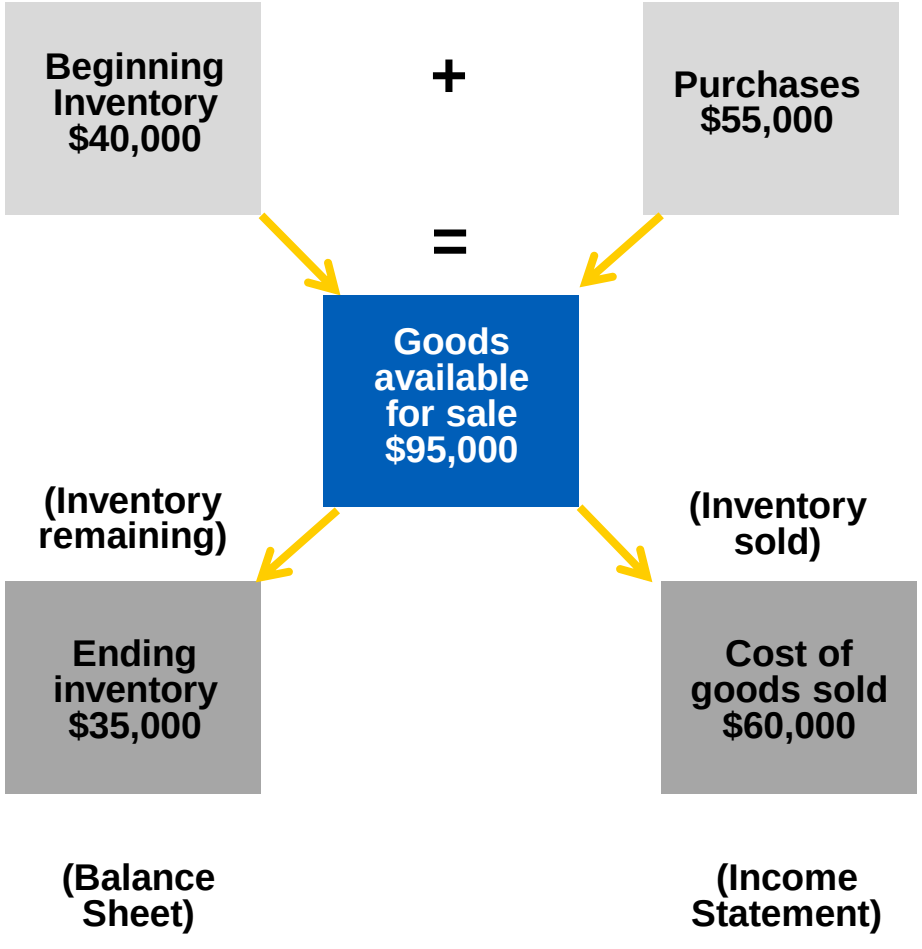
Invoice Price		XX
Less Returns	-	XX
Less Discounts	-	XX
Total Inventory Cost		XX

Flow of inventory costs

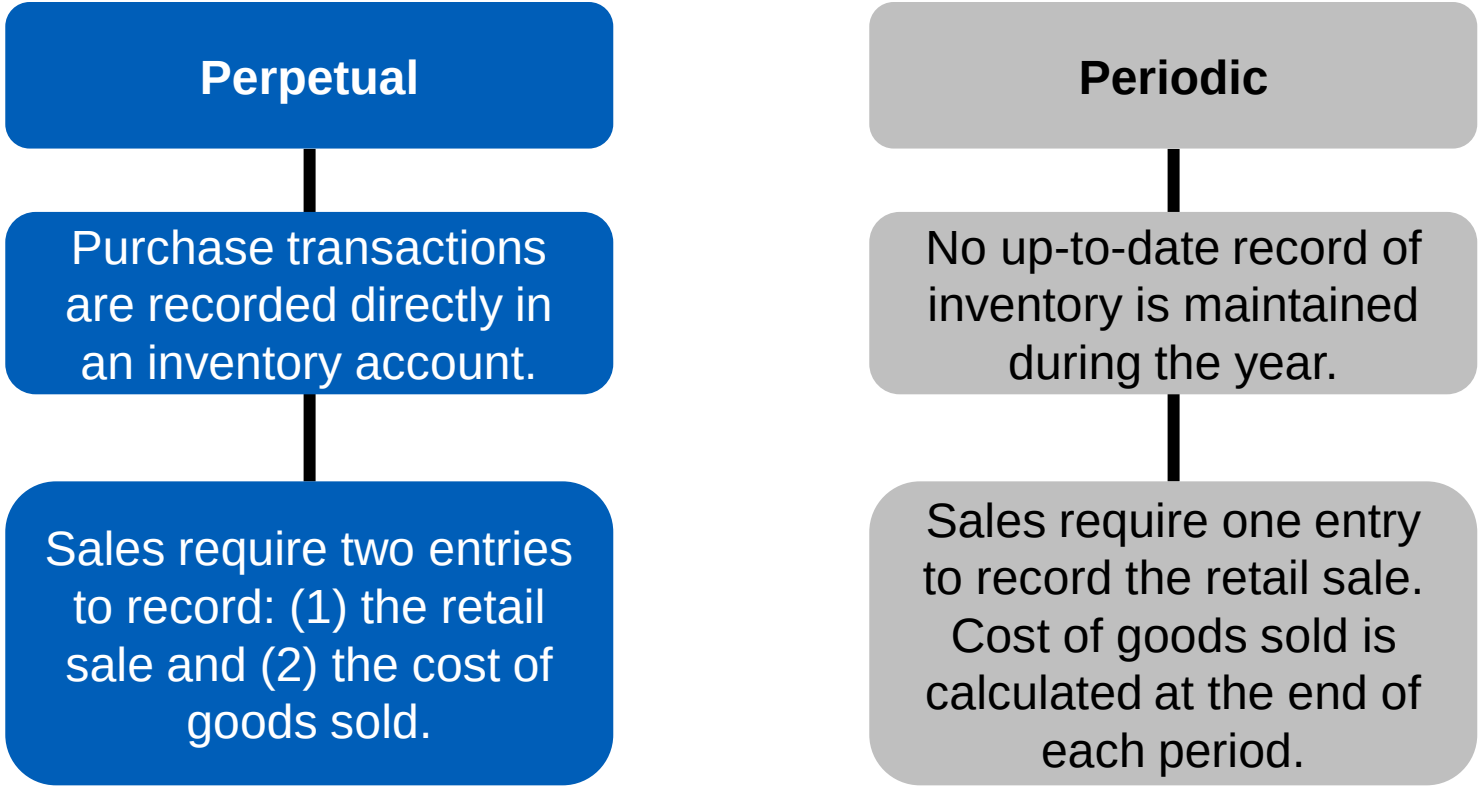


Cost of Goods Sold for Merchandise Inventory

	Beginning inventory
+	Purchases of merchandise during the year
	Goods available for sale
-	Ending inventory
	Cost of goods sold



Amount of cost of goods sold and ending inventory can be determined in two ways



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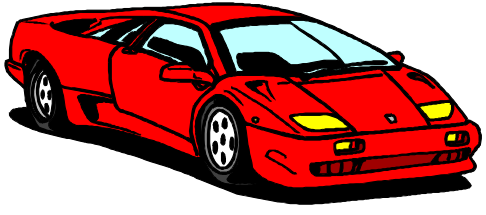
Inventory Valuation

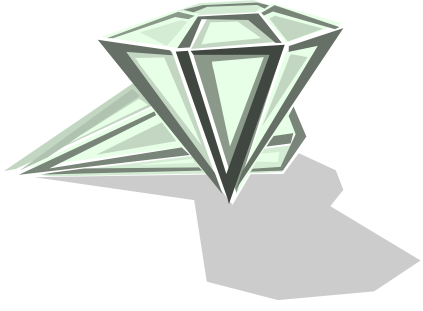
There are four generally accepted inventory costing methods – LIFO is forbidden under IFRS

Inventory Costing Methods

1. Specific identification
2. First-in, first-out (FIFO)
3. Last-in, first-out (LIFO)
4. Average cost

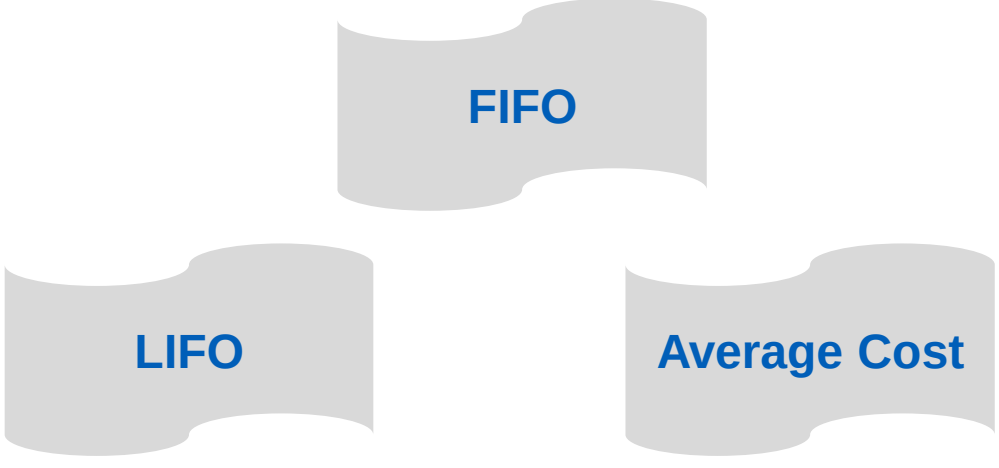
Specific identification - When units are sold, the specific cost of the unit sold is added to cost of goods sold.





Cost Flow Assumptions

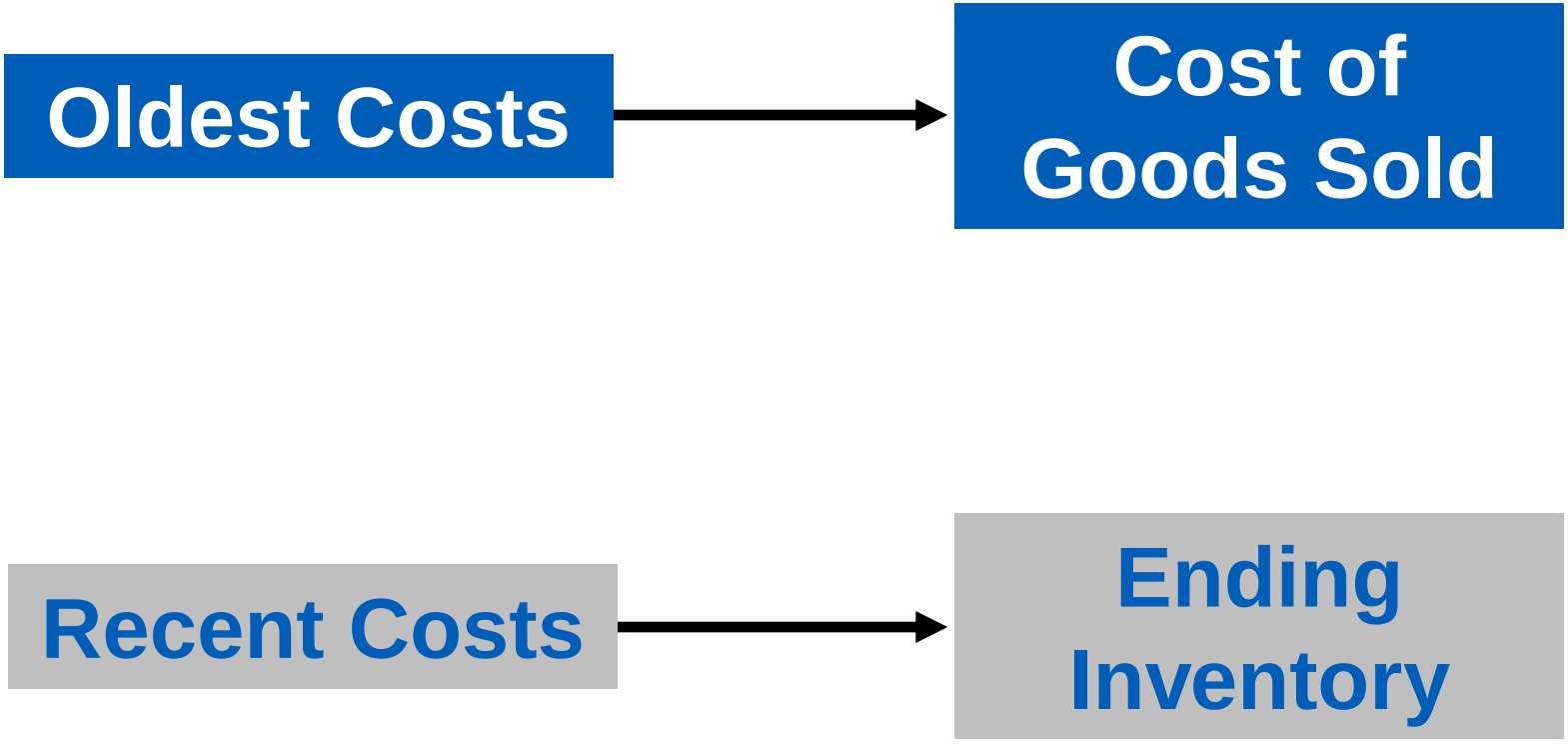
The choice of an inventory costing method is **not** based on the physical flow of goods on and off the shelves.



Visualize inventory as a bin you throw stuff in and then take out again!

The distinction lies in what you take out first!

The First-In, First-Out (FIFO) Method



The First-In, First-Out (FIFO) Method

Harley-Davidson Model A Leather Jacket Inventory			
Date	**Units**	**$/Unit**	**Total**
Beginning Inventory	2	$ 70	$ 140
Purchases:			
Jan. 12	4	$ 80	$ 320
Jan. 14	1	$100	$ 100
Goods Available for Sale	7		$ 560

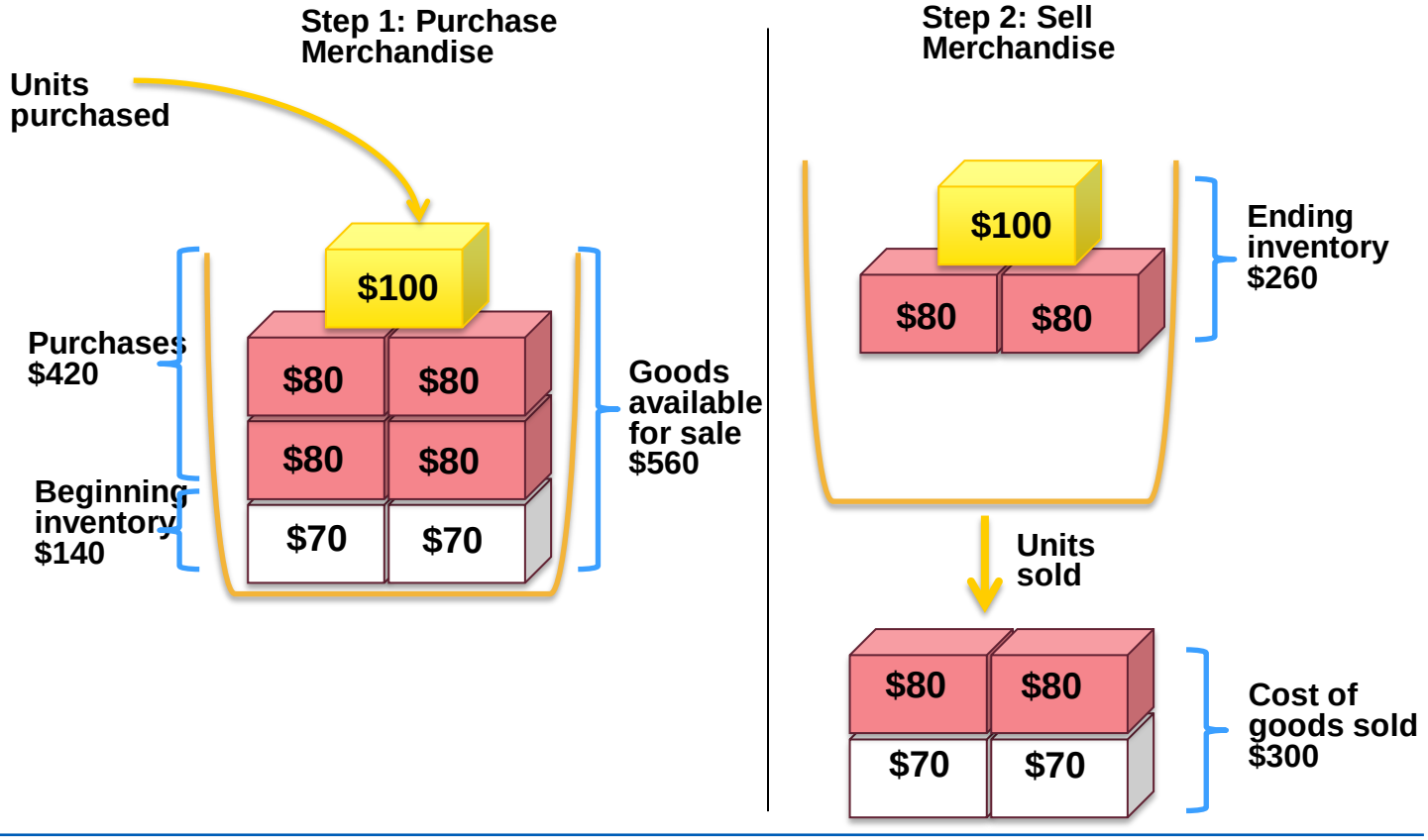
This chart provides information about purchases for the Model A leather jacket inventory for Harley-Davidson. We will use these data throughout our inventory examples so we can compare our results at the end.

Additional Information:

✓During the period, Harley-Davidson sold four units

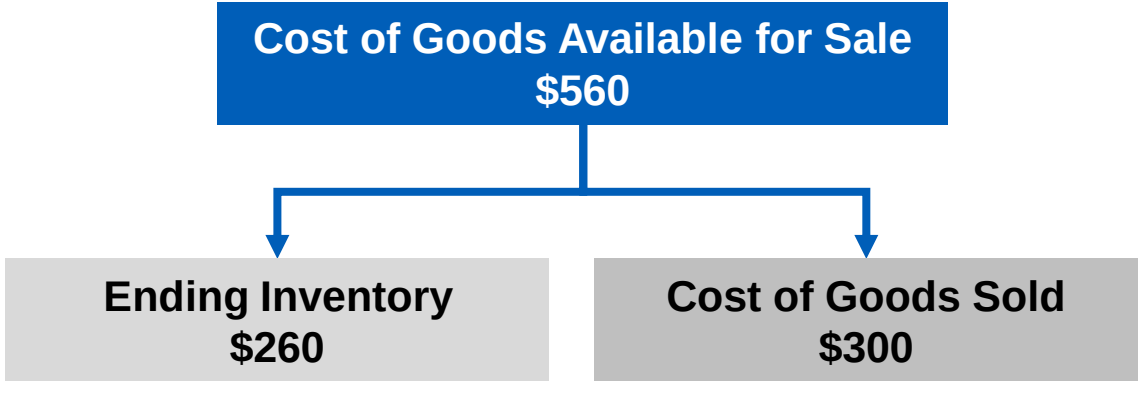
✓Three units remaining in ending inventory at the end of the period

First-In, First-Out (FIFO) inventory flows

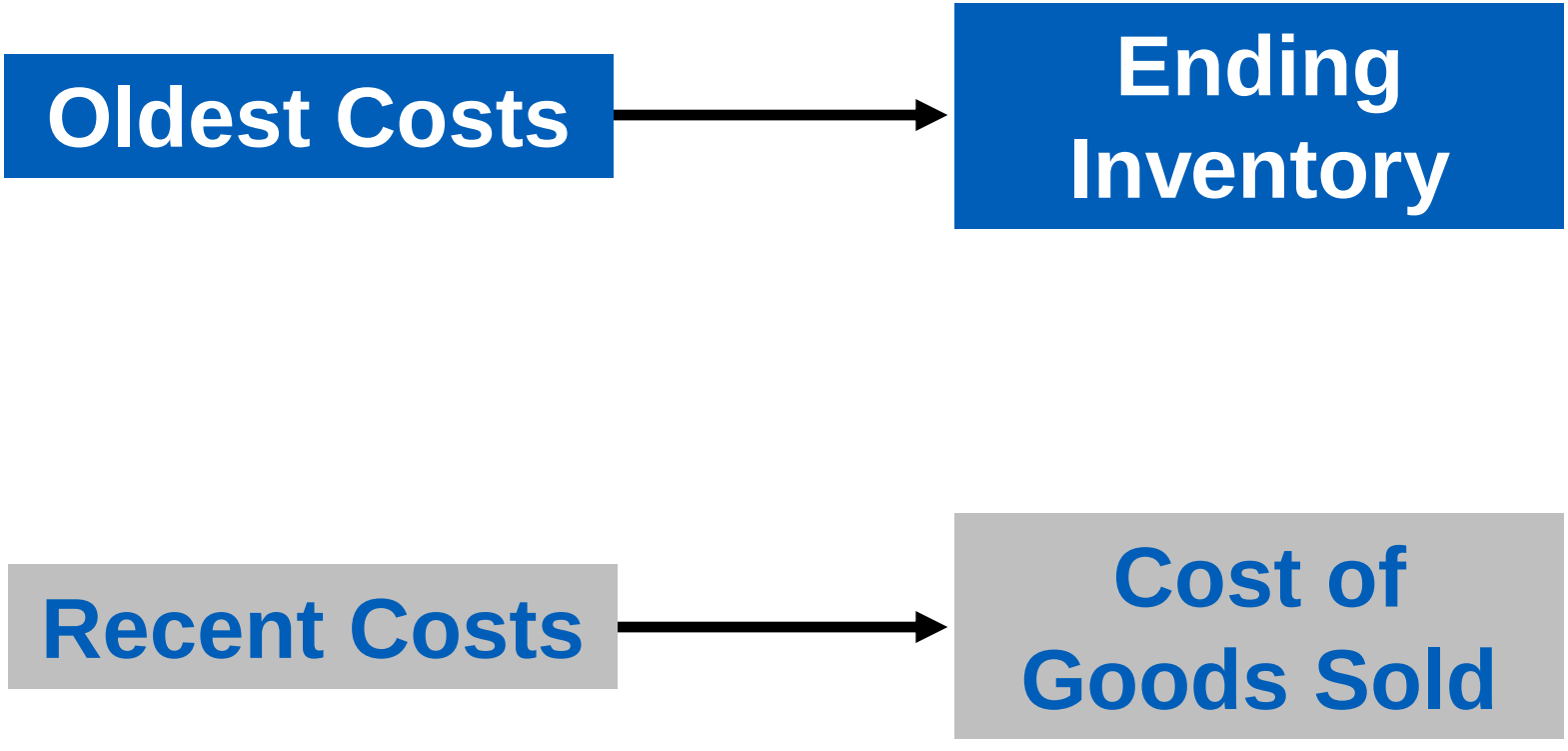


The First-In, First-Out (FIFO) Method

Cost of Goods Sold Calculation (FIFO)		
Beginning inventory	(2 units at $70 each)	$140
+ Purchases	(4 units at $80 each)	320
	(1 unit at $100 each)	100
Goods available for sale		560
− Ending inventory	(2 units at $80 each and 1 unit at $100)	260
Cost of goods sold	(2 units at $70 each and 2 units at $80 each)	$300



The Last-In, First-Out (LIFO) Method



The Last-In, First-Out (LIFO) Method

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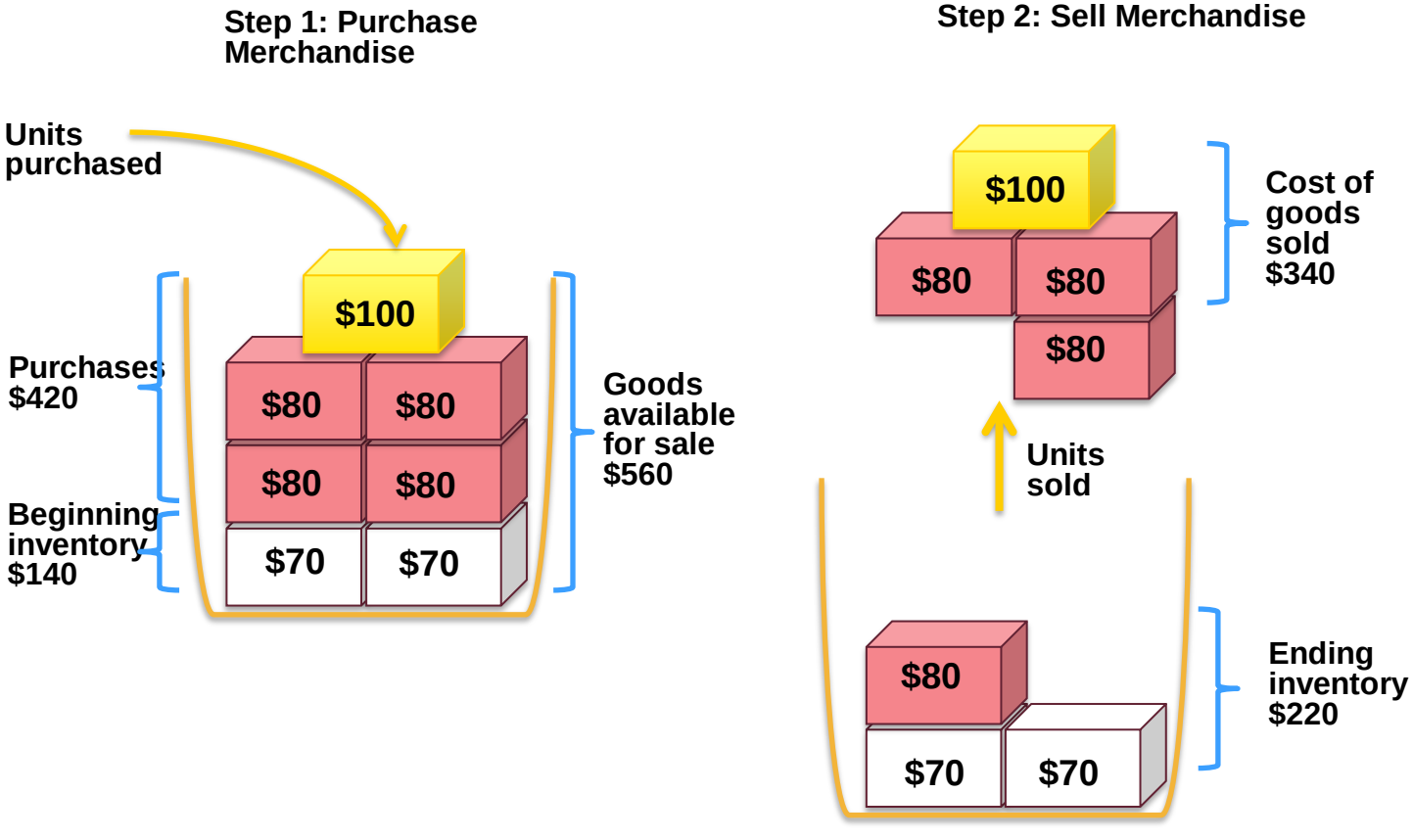
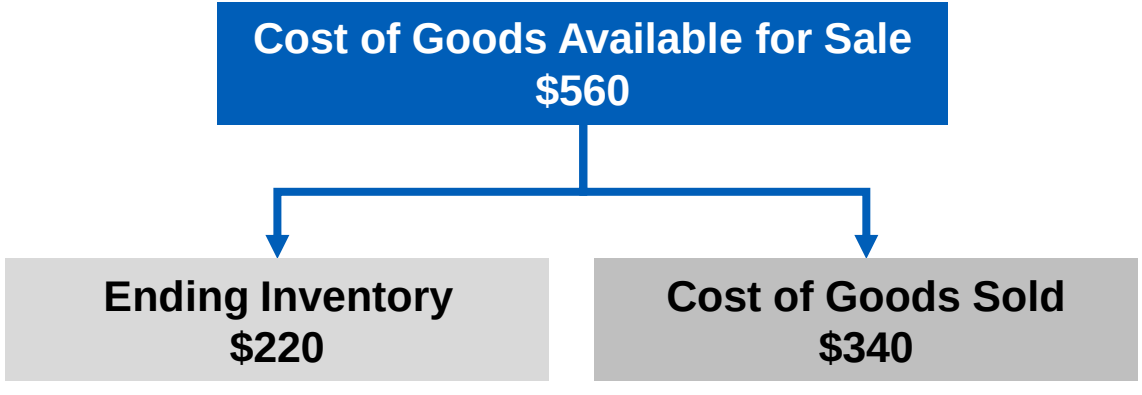
Last-In, First-Out (LIFO) inventory flows



The Last-In, First-Out (LIFO) Method

Cost of Goods Sold Calculation (LIFO)		
Beginning inventory	(2 units at $70 each)	$140
+ Purchases	(4 units at $80 each)	320
	(1 unit at $100)	100
Goods available for sale		560
− Ending inventory	(2 units at $70 each and 1 unit at $80)	220
Cost of goods sold	(3 units at $80 each and 1 unit at $100)	$340



The Average Cost Method

Harley-Davidson Model A Leather Jacket Inventory			
Date	**Units**	**$/Unit**	**Total**
Beginning Inventory	2	$ 70	$ 140
Purchases:			
Jan. 12	4	$ 80	$ 320
Jan. 14	1	$100	$ 100
Goods Available for Sale	7		$ 560

This chart provides information about purchases for the Model A leather jacket inventory for Harley-Davidson. We will use these data throughout our inventory examples so we can compare our results at the end.

Additional Information:

✓During the period, Harley-Davidson sold four units

✓Three units remaining in ending inventory at the end of the period

The Average Cost Method

When a unit is sold, the average cost of each unit in inventory is assigned to cost of goods sold.

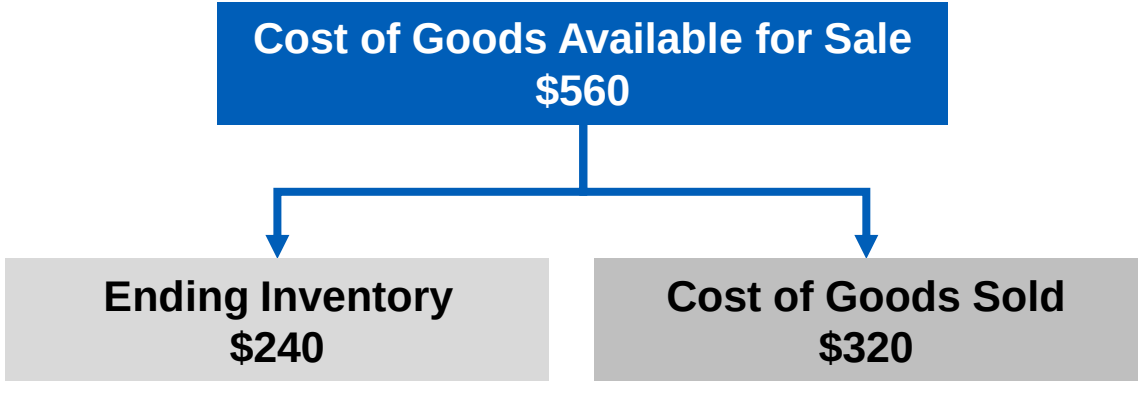
Cost of Goods Available for Sale ÷ Number of Units Available for Sale

The Average Cost Method

Cost of Goods Sold Calculation (Average Cost)		
Beginning inventory	(2 units at $70 each)	$140
+ Purchases	(4 units at $80 each)	320
	(1 unit at $100)	100
Goods available for sale	(7 units at $80 average cost each)	560
− Ending inventory	(3 units at $80 average cost each)	240
Cost of goods sold	(4 units at $80 average cost each)	$320

Weighted Average Cost

$$\frac{\$560}{7} = \$80 \text{ per unit}$$



Exercise 1

Financial Statement Effects of Inventory Costing Methods

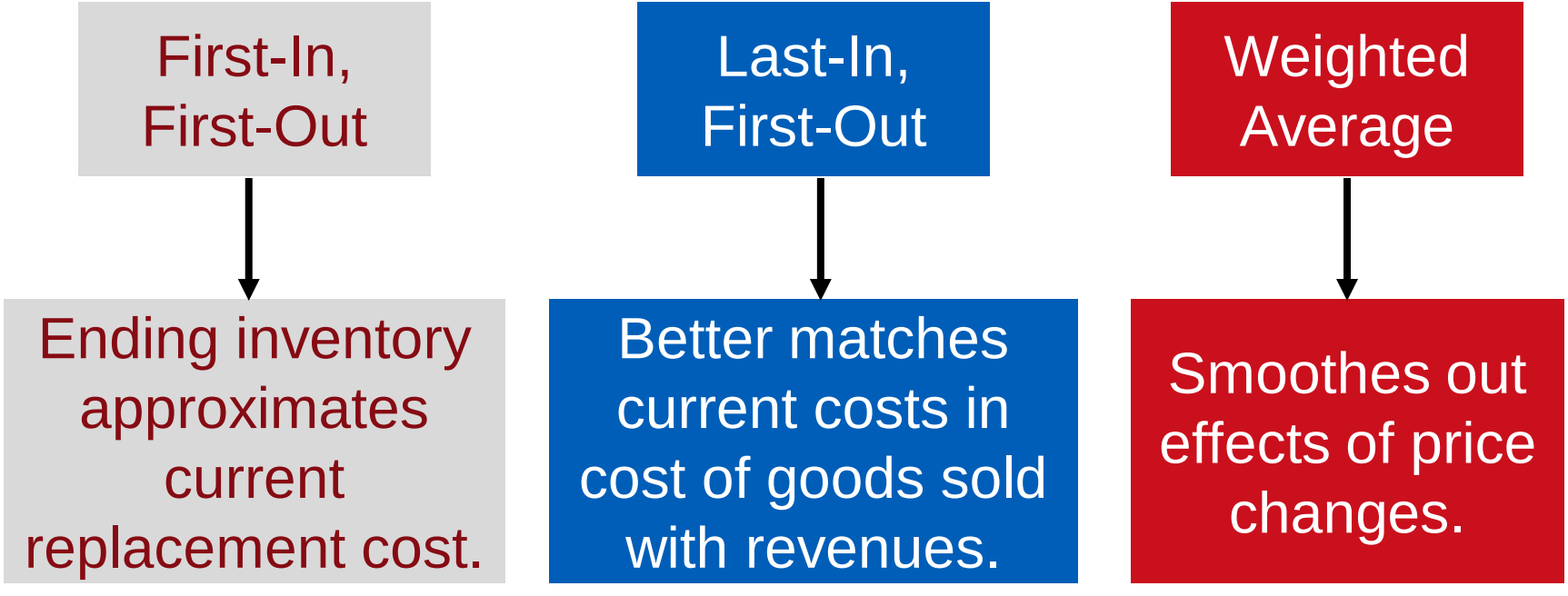
	FIFO	LIFO	Average Cost
Effect on the Income Statement			
Sales	$480	$480	$480
Cost of goods sold	300	340	320
Gross profit	180	140	160
Other expenses	80	80	80
Income before income taxes	100	60	80
Income tax expense (25%)	25	15	20
Net income	$ 75	$ 45	$ 60
Effect on the Balance Sheet			
Inventory	$260	$220	$240

Exercise 2

LIFO and International Comparisons

- While U.S. GAAP allows companies to choose among FIFO, LIFO, and weighted average inventory methods, International Financial Reporting Standards (IFRS) currently prohibit the use of LIFO.
- GAAP allows different inventory accounting methods to be used for different types of inventory items. IFRS requires that the same method be used for all inventory items that have a similar nature and use.

Financial Statement Effects of inventory Costing Methods



Increasing Costs: Normal Financial Statement Effects

	FIFO	LIFO
Cost of goods sold on income statement	Lower	Higher
Net income	Higher	Lower
Income taxes	Higher	Lower
Inventory on balance sheet	Higher	Lower

Decreasing Costs: Normal Financial Statement Effects

	FIFO	LIFO
Cost of goods sold on income statement	Higher	Lower
Net income	Lower	Higher
Income taxes	Lower	Higher
Inventory on balance sheet	Lower	Higher

Exercise 4

Managers' Choice of Inventory Methods harbors an conflict of interest

Net Income Effects
Managers prefer to report higher earnings for their companies.

Any conflict between the two motives is normally resolved by choosing one accounting method for external financial statements and a different method for preparing tax returns.

Income Tax Effects
Managers prefer to pay the least amount of taxes allowed by law as late as possible.

LIFO Conformity Rule

If last-in, first-out is used to compute taxable income, it must also be used to calculate inventory and cost of goods sold for financial statements.

Inventory Turnover

$$\text{Inventory Turnover} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}$$

Average Inventory is
(Beginning Inventory + Ending Inventory) ÷ 2

This ratio reflects how many times average inventory was produced and sold during the period. A higher ratio indicates that inventory moves more quickly, thus reducing storage and obsolescence costs.

Average Days to Sell Inventory

$$\text{Average Days to Sell Inventory} = \frac{365}{\text{Inventory Turnover}}$$

Inventory Turnover is
COGS/ Average inventory

This ratio reflects the average time in days it takes a company to produce and deliver inventory to its customers.

Exercise 3

Ending inventory is reported at the lower of cost or NRV

Inventories are valued at the lower of these:

Net realisable value (NRV) is defined as *"estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated costs necessary to make the sale"*

Ending inventory is reported at the lower of cost or market (LCM).

The company will recognize a "holding" loss in the current period rather than the period in which the item is sold.
This practice is conservative.

Particularly relevant for fashion or high-tech companies

Ending inventory is reported at the lower of cost or market (LCM).

Item	Quantity	Cost	Replacement Cost	LCM	Total LCM
Intel chips	1 000	$ 250	$ 200	$ 200	$ 200 000

GENERAL JOURNAL		
Description	Debit	Credit
Cost of goods sold (+E, -SE)	50 000	
Inventory (-A)		50 000

(1,000 Intel chips × $50) = $50,000

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Control of Inventory

Internal Control of Inventory

Separation of inventory accounting and physical handling of inventory.

Storage in a manner that protects from theft and damage.

Limiting access to authorized employees.

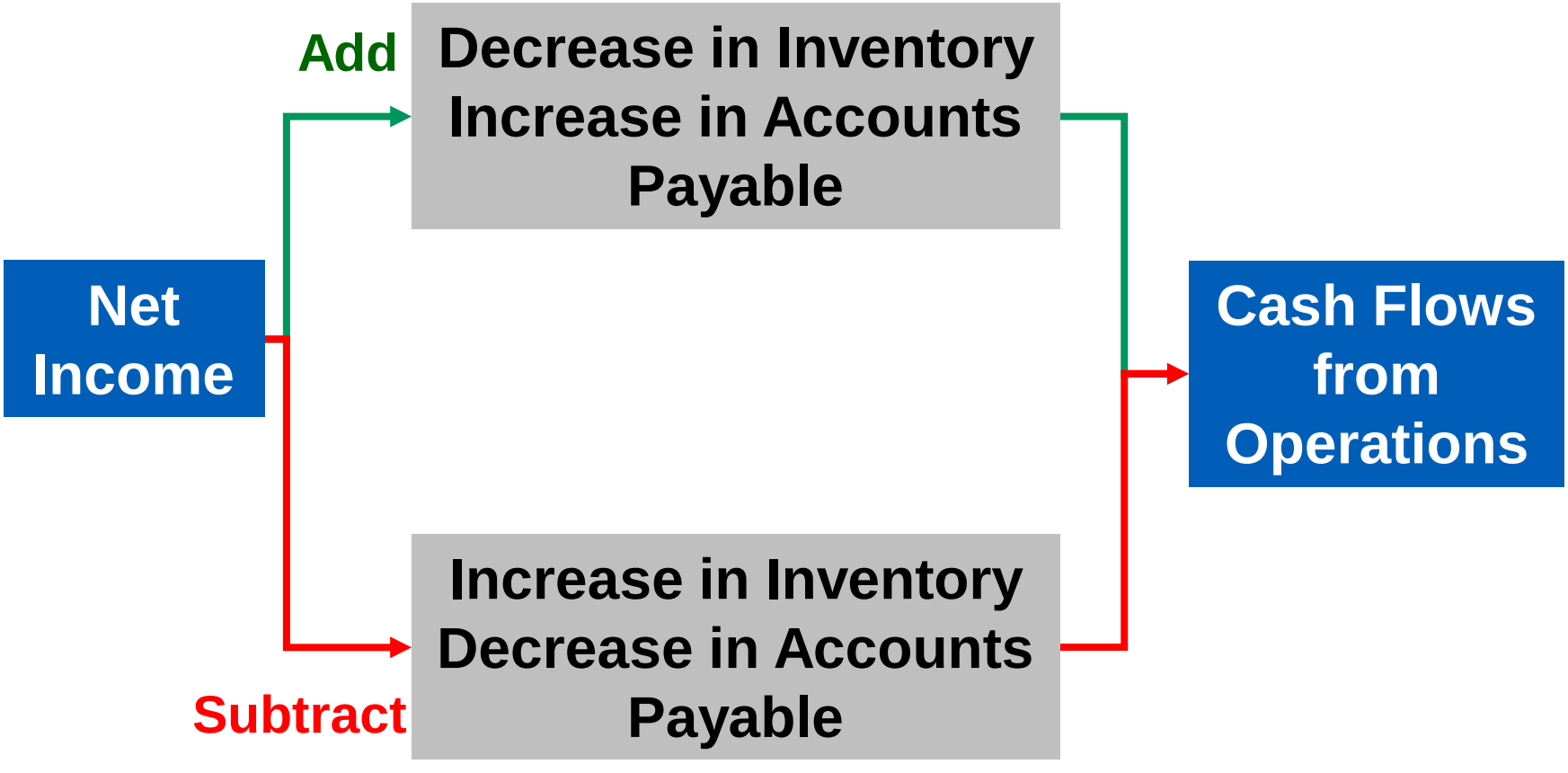
Maintaining perpetual inventory records.

Comparing perpetual records to periodic physical counts.

Effects of errors in measuring ending inventory

Errors in Measuring Inventory				
	Ending Inventory		Beginning Inventory	
	Overstated	Understated	Overstated	Understated
Effect on Current Period's Balance Sheet				
Ending Inventory	+	-	N/A	N/A
Retained Earnings	+	-	-	+
Effect on n Current Period's Income Statement				
Goods Available for Sale	N/A	N/A	+	-
Cost of Goods Sold	-	+	+	-
Gross Profit	+	-	-	+
Net Income	+	-	-	+

Effects of inventory, payables on Cash flows



Effects of inventory, payables on Cash flows

	Effect on Cash Flows
Operating activities (indirect method)	
Net income	$xxx
Adjusted for	
Add inventory **decrease**	+
or	
Subtract inventory **increase**	–
Add accounts payable **increase**	+
or	
Subtract accounts payable **decrease**	–

Exercise 5

Time for further questions and discussion!