CHAPTER 8-REPORTING AND INTERPRETING COS AND INVENTORY

TYPES OF INVENTORY AND COSTS INCLUDED

- For merchandisers /commercial:
  Inventory = purchase/invoice cost (including taxes or discounts) + ALL costs incurred to bring article to a saleable condition (freight+ insurance+ duty….)
- For manufacturers (seen in details in management accounting):
  - Raw material inventory = purchase/invoice cost (including taxes or discounts) + ALL costs incurred to bring article to a usable condition (freight+ insurance+ duty….)
  - Work-in-process (RM + direct labor + FOH)
  - Finished goods: (RM + direct labor + FOH)

TYPES OF INVENTORY CONTROL /MANAGEMENT SYSTEMS

Periodic:

- accounting records do not show inventory account at actual amount
- COS is not recorded at every sale
- COS is determined at end of period = Inv beg + purchases – Inv.end
- Ending inventory (EI)* must be counted to determine COS
- Weak control

Perpetual

- accounting records show inventory account at actual amount
- COS is recorded and determined at every sale
- COS is known at any point in time
- EI* must be counted to verify COS
- Good control

*EI = Inv on hand + other (by determining **risks and advantages transfer** of:)

- **Goods in transit FOB shipping point**: goods counted in the inventory of the buyer.
- **Goods in transit FOB destination:** goods included in the inventory of the seller.
- **Consigned goods** are counted in the inventory of the consignor (owner) rather than the consignee.

TYPES OF INVENTORY COSTING METHODS

Determining the cost of inventory at end and COS is complicated if an item has been purchased at different prices:

- **Specific identification (SI)**
  - used when actual flow is available (if not assume FIFO or Average)
  - used when goods are identifiable and valuable
  - time consuming and more expensive to apply
  - generally used with perpetual system
- **FIFO**
  - when SI is not practical : **assumed** flow
  - when goods are interchangeable

  -assumes that the earliest goods purchased are the first to be sold and recognized as COS and the latest purchased are in EI

- **(Weighted) Average** cost **(AC)**
  - other type of **assumed** flow when SI is not practical
  - when goods are interchangeable
  - allocation of the cost of goods available for sale between COS and EI is made based on the weighted average unit cost of merchandise.
  - in perpetual: a new average (moving average), is calculated after each purchase.
  - in periodic: calc. of average is done once at Y/E.

FIFO - PERPETUAL SYSTEM

Date			COS account	Inventory account balance
Beginning inventory (50 @ $95)				$ 4,750
June 2	Purchase 450	@ $100 = 5,000		49,750
June 8	Purchase 400	@ $125 = 50,000		99,750
June 10	Sale of 800 (selling price =$143.75)			
		(50 @ $95)	$4,750	
		(450 @ $100)	45,000	
		(300 @$125)	37,500	12,500
June 25	Purchase 50	@ $130 = 45,500		**$ 58,000**
			$87,250	

FIFO -PERIODIC SYSTEM

The value of EI is calculated by 1) physical count to determine quantity and 2) starting with the last purchase to determine cost:

EI	450 (**per physical count**)		
	350 @ $130 =	$45,500	
	100 @ 125 =	12,500	
		$58,000	

COS is then calculated:

Cost of goods available for sale (beg $4,750 + purchases $140,500=		145,250
Less: Ending inventory per count and FIFO valuation		58,000
COS		**$ 87,250**

OR by doing:

BI has been sold 50@ $ 95 =		$ 4,750	
FIFO Purchases have been sold	450 @ 100 =	45,000	
	300 @ 125 =	37,500	
COS	800	**$ 87,250**	

	PERPETUAL				**PERIODIC**			
JE June 2	Inventory		45,000		Purchases		45,000	
		A/P		45,000		A/P		45,000
June 8	Inventory		50,000		Purchases		50,000	
		A/P		50,000		A/P		50,000
June 10	A/R		115,000		Same			
		Sales		115,000				
	COS		87, 250		N/A			
		Inventory		87,250				
June 25	Inventory		45,500		Purchases		45,500	
		A/P		45,500		A/P		45,500
					COS		87,250	
Y/E	N/A					Inventory	53,250	
						Purchases		140,500
					→ Inv balance = 58,000			

AVERAGE COST- PERPETUAL

Date		COS account	Inventory account balance	
BI	(50 @ $95) $4,750		(50 @ $95)	$ 4,750
June 2	Purchase 450 @ $100= 45,000		(500 @ $99.50)	49,750
June 8	Purchase 400 @ $125 = 50,000		(900 @ $110.83)	99,750
June 10	Sale 800 @ $110.83 =	**$ 88,667**	(100 @ $110.83)	11,083
June 25	Purchase 350 @ $130= 45,500		(450 @ $125.74)	**$56,583**

AVERAGE COST- PERIODIC

BI	50 @ $95	$ 4,750	
Purchases:			
June 2	450 @ $100 =	45,000	
June 8	400 @ 125 =	50,000	
June 25	350 @ 130 =	45,500	
Goods available	1,250	$145,250	
Average cost	145,250 ÷ 1,250 = $116.20 per unit		
EI	$ 116.20 x 450 u=		**$52,290**
Cost of goods available for sale		$145,250	
Less: EI		52,290	
COS			**$ 92,960**
OR COS =	800 units sold x $116.20 = $92,960		

Note: 1) JEs are the same in SI or FIFO or AC (numbers are different)
2) If inventory count was not 45→AJE in periodic and perpetual:

COS	*xx*	*or*	*xx*	
Inventory		*xx*	*or*	*xx*

COMPARISON

	Perpetual-FIFO	**Periodic- FIFO**	**Perpetual-AC**	**Periodic-AC**
Sales	115,000	115,000	115,000	115,000
COS	87,250	87,250	88,667	92,960
Gross profit	27,750	27,750	26,333	22,040
Expenses	10,000	10,000	10,000	10,000
EBT	17,750	17,750	16,333	12,040
Taxes (30%)	5,325	5,325	4,900	3,606
NI	12,425	12,425	11,433	8,434
SFP - EI	58,000	58,000	56,583	52,290

- **Statement of earnings**
  - In **periods of increasing prices**, FIFO reports higher EBT and higher tax than AC (see comparison)
  - Because **AC** will reflect more recent costs in the COS resulting in a better match between revenues and expenses, thereby resulting in a **better statement of NI valuation**.
  - If decreasing prices, all the opposite: FIFO reports lower NI and tax than AC
- **SFP**
  - In **a period of increasing prices**, the costs allocated to EI using AC will understate the EI on the SFP as older costs will be included in the weighted average.
  - Because **FIFO** evaluates EI at most recent cost; provides the **best SFP valuation**

Note: SI method still results in the best NI and SFP valuation (= reality ; not an assumption)
Note: For Income tax return purposes, a different method than FS accounting method can be used.
Note: Over time, all methods will generate the same TOTAL NI and taxes.
Note: If turnover is fast; all methods will generate approximately the same FS.

INVENTORY ERRORS EFFECTS

- ***if EI is overvalued (Assets overvalued in SFP)→COS is undervalued →NI is overvalued → RE overvalued***
- ***if EI is undervalued (Assets undervalued in SFP) →COS is overvalued→NI is undervalued→RE undervalued***
- an error in EI of one period becomes an error in BI of the next period and has a ***reverse*** effect on NI of the next period (error is cancelled in RE but still has to be corrected in comparative FS).

REPORTING inventory in FS

- **At Y/E:** Inventory must be reported at the **Lower of Cost and Net Realizable Value (LCNRV)** (applied to individual items or categories not total EI)
  - **Cost** per SI, FIFO or AC
  - **NRV** = selling price, less estimated selling costs.
- If NRV is lower than cost, the inventory is **written down**. AJE:

  COS (+ note to F/S to show write down)
  Allowance (contra inv. account)
- When conditions that caused the write down no longer exist, inventory written down can be reversed. The reversal can only be written back up to the original cost.

RATIOS:
- **Inventory turnover =** COS / average inv. = # of times the inventory turns over during the period.

- **Days in inventory =** 365 days/ inv. turnover ratio= the average age (in days) of the inventory.

P8–4
Req. 1

	(a) AC	**(b) FIFO**	**(c) SI**
Sales revenue*			
Cost of sales**			
Gross profit			

Computations:

Req. 2a:

Req. 2b:

Req. 2c:

Req. 3 : JE