Thammasat University
Faculty of Economics
Bachelor of Economics (International Program)

AC201
Fundamental Accounting

Semester 1/2012

Course Materials

Topic:

Chapter 7 Reporting and Interpreting Cost of Goods Sold and Inventory

Session:

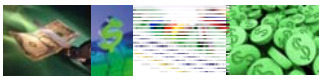
Session #7

Instructor:

Assistant Professor Dr. Orapan Yolrabil

CHAPTER 7: REPORTING AND INTERPRETING COST OF GOODS SOLD AND INVENTORY

Assistant Professor Dr. Orapan Yolrabil
Department of Accounting
Thammasat Business School
Thammasat University



มาตรฐานการบัญชี ฉบับที่ 2 (ปรับปรุง 2552)
เรื่อง
สินค้าคงเหลือ

คำแถลงการณ์

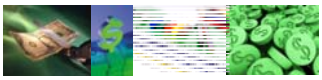
มาตรฐานการบัญชีฉบับนี้ได้ปรับปรุงให้เป็นไปตามเกณฑ์ที่กำหนดขึ้นโดย มาตรฐานการบัญชีระหว่างประเทศ เรื่อง สินค้าคงเหลือ พ.ศ. 2552 ซึ่งเป็นการแก้ไขของคณะกรรมการมาตรฐานการบัญชีระหว่างประเทศที่สิ้นสุดในวันที่ 31 ธันวาคม พ.ศ. 2551 (IAS 2 Inventories (Bound volume 2009))

TAS2 Inventories

Federation of Accounting Professions

Nature of Inventory and Cost of Goods Sold

- **Items included in inventory**
  - Inventory is tangible property that is
    - (1) held for sale in the normal course of business or
    - (2) used to produce goods or services for sale.
  - Inventory is reported on the ***Statement of Financial Position*** as a ***current asset***, because it normally is used or converted into cash within one year or the next operating cycle.



Inventory and Cost of Goods Sold Presentation

Statement of Financial Position	Statement of Comprehensive Income
• Assets: • Current Assets: • Inventory, net • [Lower of cost or net realizable value]	• Net Sales • Less: Cost of goods sold • Gross profit
Inventories include assets held for sale in the ordinary course of business (finished goods), assets in the production process for sale in the ordinary course of business (work in process), and materials and supplies that are consumed in production (raw materials).	When inventories are sold and revenue is recognized, the carrying amount of those inventories is recognized as an expense (often called cost-of-goods-sold). Any write-down to NRV and any inventory losses are also recognized as an expense when they occur.

Cost Included in Inventory Purchases

- **Goods in inventory are initially recorded at cost.**
  - Inventory cost includes the sum of the costs incurred in bringing an article to ***usable*** or ***salable*** condition and location.
    - The company should cease accumulating purchase costs when the raw materials are ready for use or when the merchandise inventory is ready for shipment.
      - Any additional costs related to selling the inventory to the dealers that are incurred after the inventory is ready for use should be included in selling, general and administrative expenses in the period they are incurred.



Accounting for Inventories

Perpetual Inventory System

- One keeping continual track of additions or deletions in materials, work-in-process, and cost of goods sold on a day-to-day basis.
- Physical inventory counts are usually taken at least once a year in order to check on the validity of the book records.
- Cost of goods sold is kept on a day-to-day basis rather than being determined periodically.

Periodic Inventory System

- One that does not require a day-to-day record of inventory changes.
- Cost of materials used and costs of goods sold cannot be calculated until ending inventories, determined by physical count, are subtracted from the sum of beginning inventories and purchases (or cost of goods available for sales)

Example on Inventory System

- **Information:**
  - Beginning inventory 100 units @ ฿6 = ฿600
  - Purchases 900 units @ ฿6 = ฿5,400
  - Sales 600 units @ ฿12 = ฿7,200
  - Ending inventory 400 units @ ฿6 = ฿2,400

Perpetual Inventory System			Periodic Inventory System		
1. Beginning inventory 100 units at 600 Baht					
Inventory account shows 600 Baht.			Inventory account shows 600 Baht.		
2. Purchase of 900 units at 6 Baht per unit on credit					
Dr. Inventory	5,400		Dr. Purchases	5,400	
Cr. Accounts payable		5,400	Cr. Accounts payable		5,400
3. Sale of 600 units at a selling price of 12 Baht per unit on account					
Dr. Accounts receivable	7,200		Dr. Accounts receivable	7,200	
Cr. Sales revenue		7,200	Cr. Sales revenue		7,200
Dr. Cost of goods sold	3,600				
Cr. Inventory		3,600			
4. End-of-period entry for inventory adjustment					
No entry			Dr. Cost of goods sold	3,600	
The ending balance of inventory shows 2,400 Baht.			Ending inventory	2,400	
The cost of goods sold shows the balance of 3,600 Baht.			Cr. Beginning inventory		600
			Purchases		5,400

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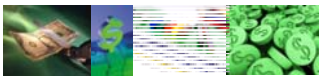


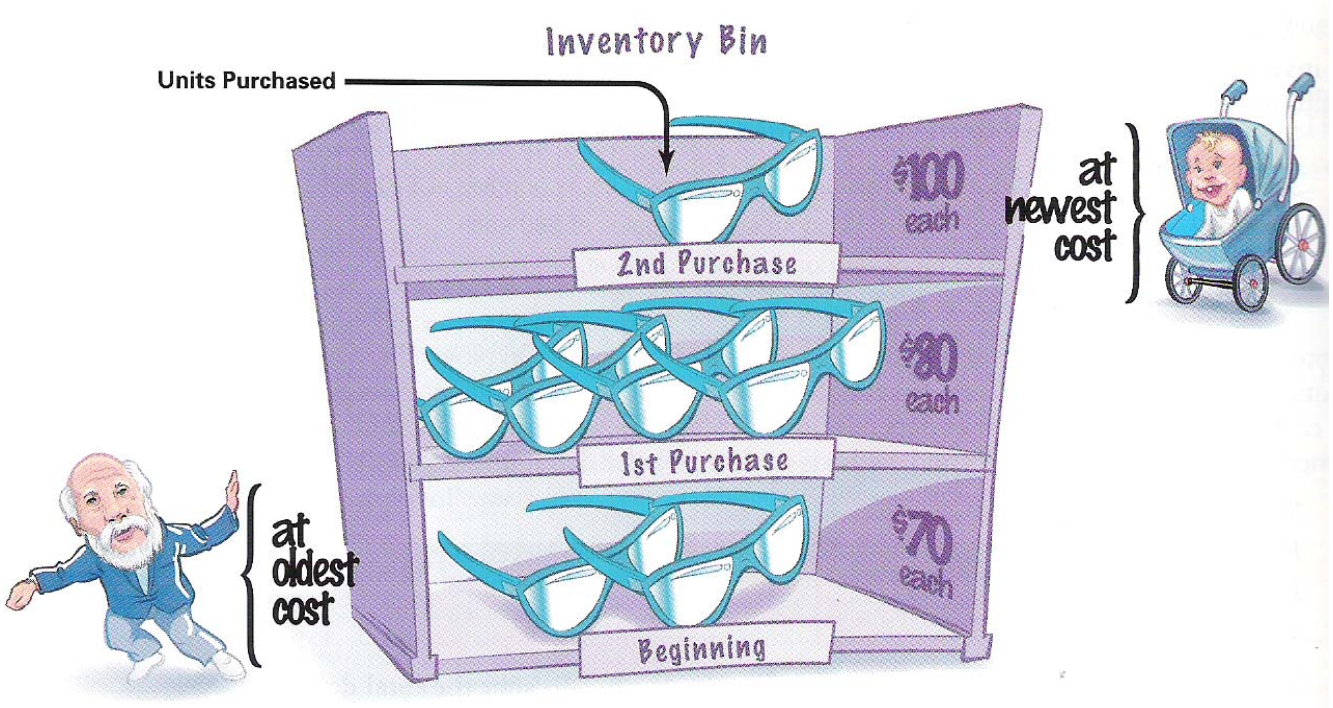
Cost of Goods Sold Calculation -- Illustration

- **Perpetual inventory systems record cost of goods sold and keep inventory at its current balance throughout the year.**
  - Therefore, there is no need to record a year-end inventory adjustment unless the perpetual records disagree with the inventory count.
    - In addition, a separate cost of goods sold calculation is unnecessary since cost of goods sold is recorded whenever inventory is sold.
- **The inventory account in a Periodic inventory system keeps its beginning balance until the end of period adjustment to the physical count.**
  - Therefore, a separate cost of goods sold calculation is necessary.

Beginning inventory	600
+ Purchases	5,400
= Cost of goods available for sale	6,000
- Ending inventory	(2,400)
= Cost of goods sold	**3,600**

Sales revenue, Cost of goods sold, and Ending inventory

• # of units sold • x Unit price	• # of units sold • x Unit cost	• # of units unsold • x Unit cost
Sales revenue	Cost of goods sold	Ending inventory



Cost of goods available for sale: The cost of all merchandise available for sale during the period; equal to the sum of beginning inventory and net purchases.

Cost of goods sold: The expenses incurred to purchase or manufacture the merchandise sold during a period.

Inventory Cost Flows Assumptions and Inventory System

First-in, First-out	Last-in, First-out
FIFO	LIFO (Not use in Thailand)
Cost Flows	
Weighted Average Cost	Specific Identification
WAC	SID

Perpetual Inventory System	Periodic Inventory System
• FIFO	• FIFO
• LIFO	• LIFO
• WAC	• WAC
• SID	• SID

FIFO

- A method of inventory accounting in which the oldest remaining items are assumed to have been the first sold.

LIFO

- A method of inventory accounting in which the most recently acquired items are assumed to have been the first sold.

Not use in Thailand

WAC

- A method of inventory that takes cost of goods available for sale and divide it by the number of units available for sale to determine an weighted average cost per unit.

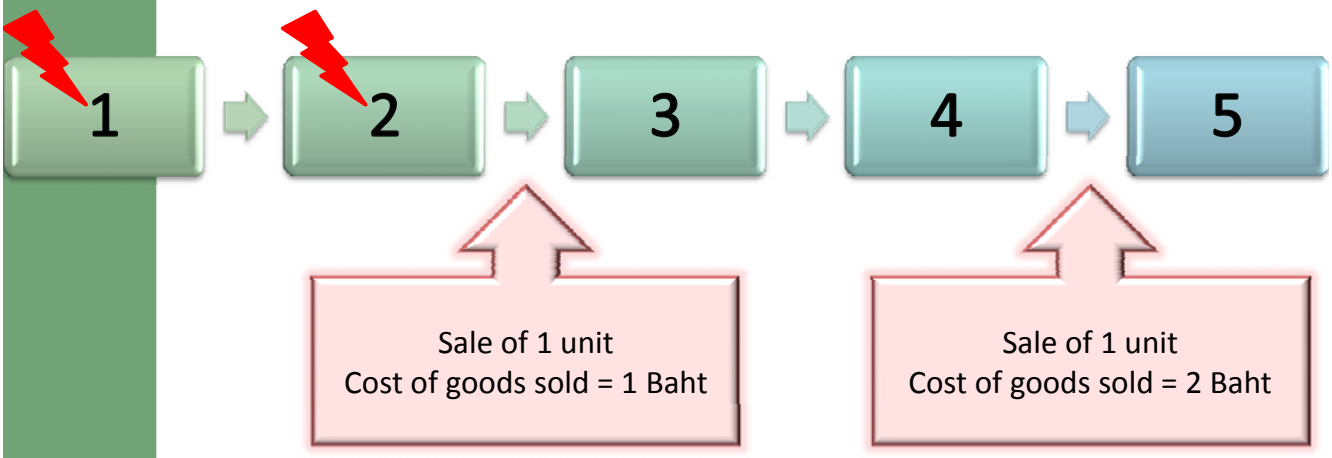
SID

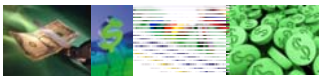
- Inventory method that considers the sale and cost of each item specifically.

Perpetual & FIFO

Units available for sales = 5 units
Cost of goods available for sales = 15 Baht

Cost of goods sold = 1+2 = 3 Baht
Ending inventory = 3+4+5 = 12 Baht

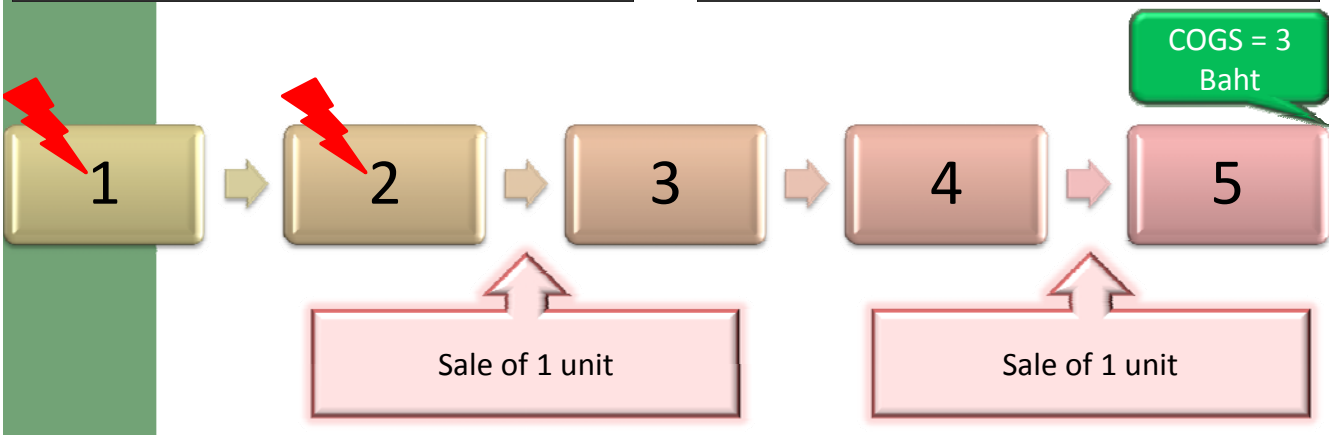




Periodic & FIFO

Units available for sales = 5 units
Cost of goods available for sales = 15 Baht

Cost of goods sold = 1+2 = 3 Baht
Ending inventory = 3+4+5 = 12 Baht



Perpetual & Weighted Average

Units available for sales = 5 units
Cost of goods available for sales = 15 Baht

Cost of goods sold = 1.50+2.83 = 4.33 Baht
Ending inventory = 5.67+5 .00= 10.67 Baht

1 → 2 → 3 → 4 → 5

Sale of 1 unit
Cost of goods sold = 1.50 Baht

Sale of 1 unit
Cost of goods sold = 2.83 Baht

Weighted average cost per unit for Sale #1
= Cost of goods available for sale /
# of units available for sale
= 3 Baht / 2 Units
= 1.50 Baht per unit

Weighted average cost per unit for Sale #2
= Cost of goods available for sale /
# of units available for sale
= 8.50 Baht / 3 Units
= 2.83 Baht per unit

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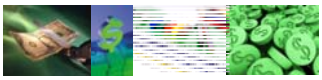


Periodic & Weighted Average

Units available for sales = 5 units
Cost of goods available for sales = 15 Baht

Cost of goods sold = 3 X 2 units = 6 Baht
Ending inventory = 3 X 3 units = 9 Baht

COGS = 6 Baht

1 → 2 → 3 → 4 → 5

Sale of 1 unit

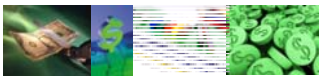
Sale of 1 unit

Weighted average cost per unit for the period
= Cost of goods available for sale / # of units available for sale
= 15 Baht / 5 Units
= 3 Baht per unit

Perpetual & Periodic Inventory System Examples

Cost of Goods Available for Sale					Unit cost (Baht)		Amount (Baht)
Jan.	1	Beg. Inventory	10	units @	90	=	900
Feb.	3	Purchased	15	units @	105	=	1,575
Jul.	17	Purchased	20	units @	115	=	2,300
Aug.	28	Purchased	10	units @	120	=	1,200

Retail Sales of Goods					Unit price (Baht)		Amount (Baht)
Jun.	14	Sales	20	units @	130	=	2,600
Nov.	30	Sales	25	units @	150	=	3,750



Perpetual Inventory System & FIFO

DATE	PURCHASES			COST OF GOODS SOLD			INVENTORY		
	Quantity	Unit cost	Total cost	Quantity	Unit cost	Total cost	Quantity	Unit cost	Total cost
Jan. 1							10	90	**900**
Feb. 3	15	105	**1,575**				10	90	**900**
							15	105	**1,575**
Jun. 14				10	90	**900**	5	105	**525**
				10	105	**1,050**			
Jul. 17	20	115	**2,300**				5	105	**525**
							20	115	**2,300**
Aug. 28	10	120	**1,200**				5	105	**525**
							20	115	**2,300**
							10	120	**1,200**
Nov. 30				5	105	**525**	10	120	**1,200**
				20	115	**2,300**			

Cost of goods sold = 4,775 Baht

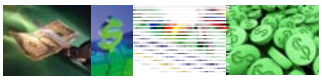
Ending Inventory = 1,200 Baht

Perpetual Inventory System & Weighted Average Cost

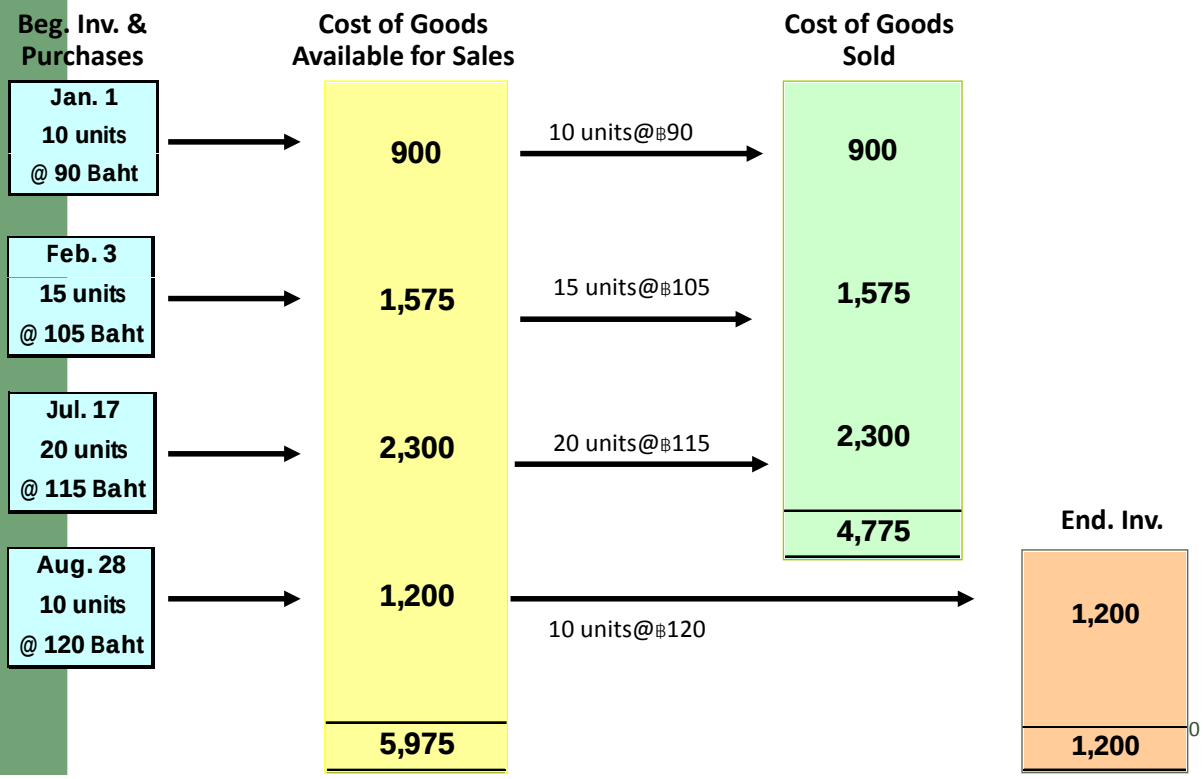
DATE	PURCHASES			COST OF GOODS SOLD			INVENTORY		
	Quantity	Unit cost	Total cost	Quantity	Unit cost	Total cost	Quantity	Unit cost	Total cost
Jan. 1							10	90	**900**
Feb. 3	15	105	**1,575**				25	99	**2,475**
Jun. 14				20	99	**1,980**	5	99	**495**
Jul. 17	20	115	**2,300**				25	111.80	**2,795**
Aug. 28	10	120	**1,200**				35	114.14	**3,995**
Nov. 30				25	114.14	**2,854**	10	114.14	**1,141**

Cost of goods sold
= 4,834 Baht

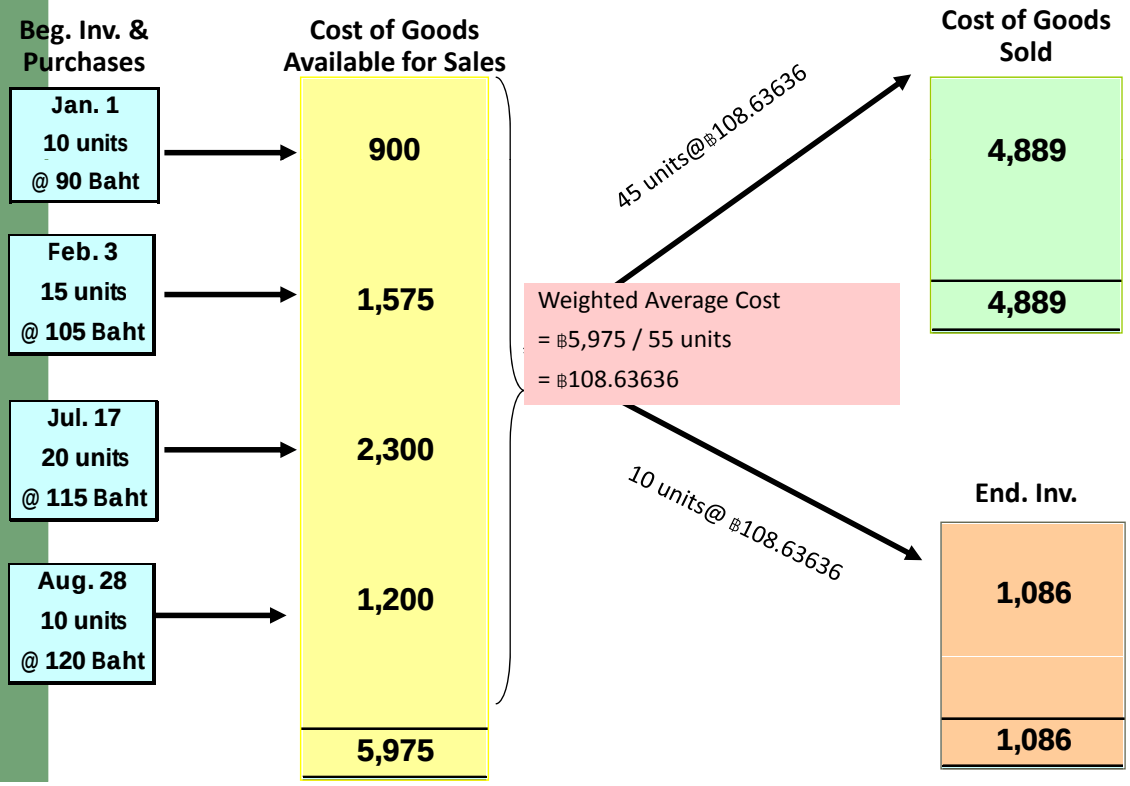
Ending Inventory
= 1,141 Baht

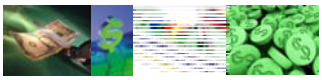


Periodic Inventory System & FIFO



Periodic Inventory System & Weighted Average Cost





Cost Flow Assumptions Compared

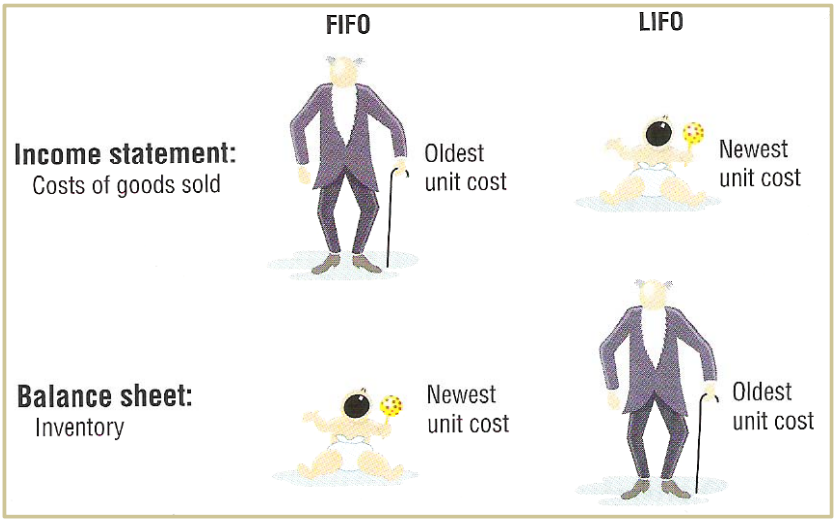
Inventory Valuation Methods: A Summary			
Valuation Method	Costs Allocated to: Cost of Goods Sold	Inventory	Comments
Specific identification	Actual cost of the units sold	Actual cost of units remaining	Parallels physical flow Logical method when units are unique May be misleading for identical units
Average cost	Number of units sold times the average unit cost	Number of units on hand times the average unit cost	Assigns all units the same average unit cost Current costs are averaged in with older costs
First-in, First-out (FIFO)	Cost of earliest purchases on hand prior to the sale	Cost of most recently purchased units	Cost of goods sold is based on older costs Inventory valued at current costs May overstate income during periods of rising prices; may increase income taxes due
Last-in, First-out (LIFO)	Cost of most recently purchased units	Cost of earliest purchases (assumed still in inventory)	Cost of goods sold shown at recent prices Inventory shown at old (and perhaps out of date) costs Most conservative method during periods of rising prices; often results in lower income taxes

LIFO-FIFO combined with Periodic and Perpetual

- **When using FIFO, the COGS and Ending inventory are the same for both perpetual and periodic.**
- **When using LIFO (and Weighted Average), the perpetual and periodic recording methods do not give the same value for COGS and Ending inventory.**
  - In a period of rising prices (inventory costs are rising), COGS under LIFO PERIODIC will either be equal to (rarely) or greater than (usually) COGS using LIFO PERPETUAL.

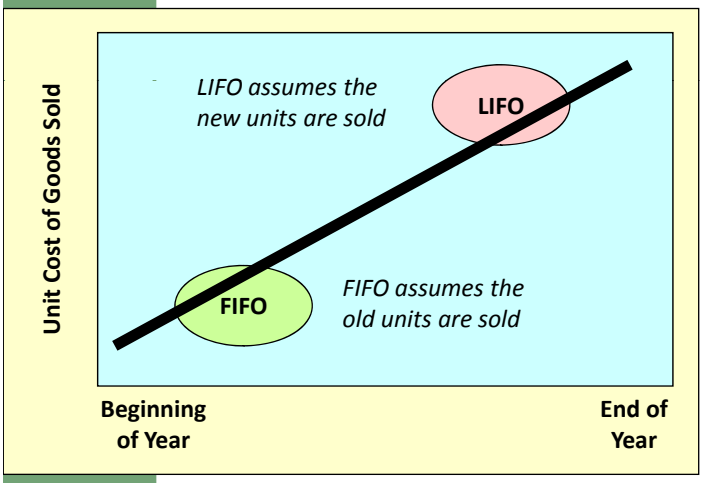


FIFO VS. LIFO



	Cost of Goods Sold (on the income statement)	*Inventory (on the balance sheet)*
FIFO	First-in (oldest) unit costs	Newest unit costs
LIFO	Last-in (newest) unit costs	Oldest unit costs

FIFO and LIFO in Time of Inflation



Increasing Costs: Normal Financial Statement Effects		
	FIFO	LIFO
Cost of goods sold	Lower	Higher
Net income	Higher	Lower
Income taxes	Higher	Lower
Inventory	Higher	Lower
Decreasing Costs: Normal Financial Statement Effects		
	FIFO	LIFO
Cost of goods sold	Higher	Lower
Net income	Lower	Higher
Income taxes	Lower	Higher
Inventory	Lower	Higher

Example of Financial Statement Presentation & Disclosure: Inventories

[Source: www.farmhouse.co.th]

BALANCE SHEETS

President Bakery Public Company Limited
As at 31 December 2010 and 2009

(Unit : Baht)

		Financial statements in which the equity method is applied		Separate financial statements	
	Note	2010	2009	2010	2009
Assets					
Current assets					
Cash and cash equivalents	6	385,066,986	85,947,113	385,066,986	85,947,113
Trade accounts receivable					
Related party	7, 9	120,973	66,313	120,973	66,313
Unrelated parties - net	7	529,960,712	452,864,675	529,960,712	452,864,675
Total trade accounts receivable - net		530,081,685	452,930,988	530,081,685	452,930,988
Inventories	8	140,930,621	116,929,748	140,930,621	116,929,748
Other current assets		14,109,410	10,100,648	14,109,410	10,100,648
Total current assets		1,070,188,702	665,908,497	1,070,188,702	665,908,497

INCOME STATEMENTS

President Bakery Public Company Limited
For the years ended 31 December 2010 and 2009

(Unit : Baht)

	Note	Financial statements in which the equity method is applied		Separate financial statements	
		2010	2009	2010	2009
Revenues					
Sales		4,596,386,529	3,912,737,836	4,596,386,529	3,912,737,836
Interest income		4,071,842	1,058,717	4,071,842	1,058,717
Other income		12,689,288	6,933,179	13,274,288	6,933,179
Total revenues		4,613,147,659	3,920,729,732	4,613,732,659	3,920,729,732
Expenses					
Cost of sales		2,804,137,759	2,389,519,215	2,804,137,759	2,389,519,215
Selling expenses		618,251,504	532,405,195	618,251,504	532,405,195
Administrative expenses		392,918,696	333,999,983	392,918,696	333,999,983
Management's remuneration		48,973,570	44,929,685	48,973,570	44,929,685
Total expenses		3,864,281,529	3,300,854,078	3,864,281,529	3,300,854,078

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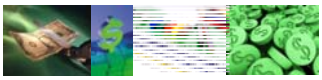

4.4 Inventories

Inventories are valued at the lower of cost (weighted average basis) and net realisable value. Cost of finished goods and work in process comprises all production costs and attributable factory overhead.

Raw and packing materials, spare parts and factory supplies are charged to production costs whenever consumed.

8. INVENTORIES

(Unit : Baht)

	2010	2009
Finished goods	1,751,273	2,088,021
Work in process	3,382,346	3,700,422
Raw materials	57,109,332	48,277,068
Packaging materials	38,788,865	33,782,012
Spare parts and factory supplies	39,898,805	29,082,225
Total	140,930,621	116,929,748

Operation Cycle

Operating Cycle
= Days to sell inventory
+ Days to collect accounts receivable

Days to sell inventory
= 365 days /
Inventory turnover rate

Days to collect accounts receivable
= 365 days /
Accounts receivable turnover rate

Inventory turnover rate
= Cost of goods sold / Average inventory

Average inventory
= (Beg. B/L + End. B/L)/2

Accounts receivable turnover rate
= Net sales / Average accounts receivable

Average accounts receivable
= (Beg. B/L + End. B/L)/2

Date of purchase → Date of sale

Date of sale → Date of collection

Date of purchase ----------> Date of collection

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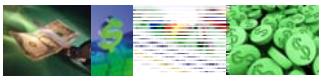

Cash Cycle

Date of purchase ----------> Date of collection

Operating cycle
= Days to sell inventory + Days to collect accounts receivable

Date of purchase → Date of payment

Days to pay accounts payable
= 365 days / Accounts payable turnover rate

Accounts payable turnover rate
= Purchases / Average accounts payable

Average accounts payable
= (Beg. B/L + End. B/L)/2

Cash cycle
= Operating cycle – Days to pay accounts payable

External financing needed