

Why inventories are so important?



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Composition of Inventories

1. taking a physical count of inventories
2. determining the ownership of goods.

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Taking Physical Count

During the physical count, a company should pay very close attention to the following issues in order to have an effective internal control and also to minimize the errors and fraud:

1. the employees who are responsible from safekeeping of inventory items should not count them,
2. it has to be made sure that the items are complete and what they are supposed to be,
3. items should be re-counted by another independent employee for verification,
4. counting process should be documented by tagging the inventory items,
5. a supervisor should oversee that each item has only one tag, and that each item is counted, and
6. there should be no inventory movements during the count

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Whose ?

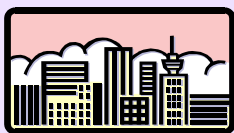
Determination of the owner of goods:

- **Goods in transit** are goods that are on the way to the company (purchases) or goods that are on a carrier being shipped to the customer
- **Consignment goods**
 - **consignor** (owner of the merchandise) and the **consignee** (the holder of the goods)

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Seller

WHO OWNS THE GOODS ON THE WAY?



F.O.B. SHIPPING POINT



Buyer

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Seller

WHO OWNS THE GOODS ON THE WAY?

F.O.B. DESTINATION

Buyer

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Inventory Costs

Beginning Inventory + Purchases - Ending Inventory = COGS

Available for Sale

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Inventory Cost Flows

- Specific Identification Method
- First-in First-out
- Weighted Average
- Last-in First-out – not allowed by IFRS or CMB

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Specific Identification Method

- used when the actual cost of the item is tracked
- closely follows the actual flow of goods
- whether a company uses a periodic or perpetual inventory system does not make any difference on cost of goods sold or the amount of inventory

Cost Flow vs. Physical Flow

- **First-in First-out (FIFO), and weighted average methods assume that flow of costs may be unrelated to physical flow of goods**
- **The accounting regulations do not require that the physical flow of goods and the related cost flow to be the same**

Example-Cost Flow

Cacun Elektronik B55 Alpha Relay				
Date	Explanation	Units	Unit Cost	Total Cost
1.1.2007	Beg. Inv.	100	TL 10	TL 1.000
15.5.2007	Purchase	200	11	2.200
20.5.2007	Sale	250		
25.7.2007	Purchase	300	12	3.600
10.10.2007	Sale	300		
1.12.2007	Purchase	400	13	5.200
Available for Sale		1.000		TL 12.000

First-in First-out Method FIFO

- FIFO method assumes that the goods purchased earlier will be sold first
- The cost of the first units on hand is assigned to the units sold first

FIFO-COGS: Periodic Inventory System

Units Sold	Unit Cost	Total
550	100 x 10	TL 1.000
	200 x 11	2,200
	250 x 12	3,000
550		TL 6.200

FIFO -Ending Inventory: Periodic Inventory System

Units on hand	Unit Cost	Total
450	400 x 13	TL5.200
	50 x 12	600
450		TL 5.800

FIFO – COGS and Ending Inventory : Perpetual Inventory System

Date	Purchased	Units Sold	Unit Cost	COGS (units x unit cost)	Balance (units x unit cost)
1.1.2007					100 x 10 =1.000
15.5.2007	200@11				100 x 10 = 1.000 200 x 11 = 2.200
20.5.2007		250	100 x 10	TL 1.000	
			150 x 11	1,650	50 x 11 = 650
25.7.2007	300@12				50 x 11= 650 300 x 12 =3.600
10.10.2007		300	50 x 11	550	
			250 x 12	3,000	50 x 12 = 600
1.12.2007	400@13				50 x 12 =600 400 x 13 =5.200
		550		TL 6.200	5,800

Weighted Average

- Goods available are homogeneous and the cost to be assigned to each unit sold is the same

$$\text{Unit Cost} = \frac{\text{Total Cost of Goods Available for Sale}}{\text{Total Number of Units Available for Sale}}$$

Weighted Average-Periodic

- assumes that the prices of the goods available for sale are homogeneous

$$\text{Unit Cost} = \frac{12.000}{1.000} = \text{TL 12 per unit}$$

$$\text{TL 12 (average unit cost)} \times 550 \text{ (number of units sold)} = \text{TL 6.600}$$

$$\text{TL 12 (average unit cost)} \times 450 \text{ (number of units on hand)} = \text{TL 5.400}$$

Weighted Average-Perpetual

Weighted Average– COGS and Ending Inventory : Perpetual Inventory System

Date	Purchased	Units Sold	Unit Cost Assigned	COGS (units x)	Balance (total cost ÷ number of units = unit cost)
1.1.2007					100 x 10 =1.000
15.5.2007	200 @ 11				3.200 ÷ 300= 10.66
20.5.2007		250	250*10,66	2,667	50 x 10.66=533
25.7.2007	300 @ 12				(533+ 3600) ÷ 350= 11.81
10.10.2007		300	300*11.81	3,543	50 x 11.81 = 590.50
1.12.2007	400 @ 13				(590.50 + 5.200) ÷ 450= 12.87
		550		TL 6.210	TL 5.790

Lower of Cost or Net Realizable Value

- as time passes the value of the inventories might decline in the market because of the obsolescence factor
- IFRS specify that the companies should use the **lower-of-cost-or net realizable (LCNRV)** valuation basis
- Net realizable value is the expected sales price less costs to sell
- LCNRV rule can be applied with any of the cost flow methods, or the specific identification method
- LCNRV may be applied to individual items or major categories of inventory
- the decline in value is not expected to increase in the very near future

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Example-LCM-1

Item by item

Item	Quantity	Unit Cost (TL)	Unit Market (TL)	Inventory Value at Cost (TL)	Inventory Value at Market (TL)	Inventory Value at LCM (TL)
W	75	130	125	9.750	9.375	9.375
X	48	151	164	7.248	7.872	7.248
Y	101	87	81	8.787	8.181	8.181
Z	64	110	115	7.040	7.360	7.040
				32.825	32.788	31.844

Date	Account Title and Description	Debit	Credit
31-Dec-07	Loss from Decline in Value of Inventory	981	
	Allowance for Decline in Value of To record the decline in value.		981

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Example-LCM-2

on 15 August 2008, the company sold 15 units of Item W at TL 126 per unit

Date	Account Title and Description	Debit	Credit
15-Aug-08	Cash	1.890	
	Sales		1.890
	To recognize the sale of 15 units of item W		
15-Aug-08	COGS (*)	1.875	
	Allowance for Decline in Inventory	75	
	Inventories		1.950
	To record COGS of the sale of 15 units of item W		

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Gross Profit Method

Gross profit percentage = 40% , therefore

COGS percentage = 60%

Beginning inventory	TL200
Purchases	<u>1.000</u>
Cost of Goods Available for Sale	TL1.200
COGS :	
Net Sales	1.000
Gross Profit (40% of 1000)	<u>400</u>
Ending Inventory	TL 600

Inventory Management and Ethical Issues

- inventories are closely related with net income and thus with the shareholders' equity, and the assets
- taking decisions that would affect the ending inventory and cost of goods sold amount, the management can manipulate income
- for example, management might decide to make a large purchase at the end of the period, in order to maximize profits in that period, and then return the goods at the beginning of the following period stating that they are not according to specifications

Analysis of Inventories

- To check whether adequate profits are generated by the operations
- To check whether inventory is adequate to meet future demands

Some Ratios

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Sales}}$$

very low ratio might point to some problems that are related to pricing policies, and inefficiencies in the production process

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

a high turnover ratio usually shows that a company does not have obsolete products that it cannot sell

$$\text{Average Number of Days' Inventory on Hand} = \frac{365 \text{ days}}{\text{Inventory Turnover Ratio}}$$

shows whether a company has adequate stock on hand; can be used as an indicator of holding obsolete inventory



Moving fast... Are we not?

Last-in First-out Method LIFO

- Costs are matched against the revenues in the reverse order of incurrence
- Cost of the most recent purchased goods are assigned to units that are sold first

LIFO-COGS: Periodic Inventory System

Units Sold	Unit Cost	Total Cost
550	400 x 13	TL 5.200
	150 x 12	1.800
550		TL 7.000

LIFO -Ending Inventory: Periodic Inventory System

Units on hand	Unit Cost	Total Cost
450	100 x 10	TL 1.000
	200 x 11	2.200
	150 x 12	1.800
450		TL 5.000

Date	Purchased	Units Sold	Unit Cost	COGS (units x unit cost)	Balance (units x unit cost)
1.1.2004					100 x 10 = 1.000
15.5.2004	200 @ 11				100 x 10 = 1.000 200 x 11 = 2.200
20.5.2004		250	200 x 11	TL 2.200	
			50 x 10	500	50 x 10 = 500
25.7.2004	300 @ 12				50 x 10 = 500 300 x 12 = 3.600
10.10.2004		300	300 x 12	3.600	50 x 10 = 500
1.12.2004	400 @ 13				50 x 10 = 500 400 x 13 = 5.200
		550		TL 6.300	TL 5.700

**Summary
Perpetual Inventory System**

	FIFO	LIFO	Weighted Ave.
Ending Inventory	6.200	5.700	5.790
COGS	5.800	6.300	6.210
