

Items

Valuation Methods

SAP Business One, Version 9.0



- Welcome to the topic on valuation methods.

Objectives



At the end of this topic, you will be able to:

- List the three valuation methods used in perpetual inventory in SAP Business One
- Describe how each valuation method works
- Discuss the differences between perpetual and non-perpetual inventory

- In this topic, we will look at the three valuation methods used in perpetual inventory in SAP Business One. We describe how each valuation method works. Additionally, we look at using non-perpetual inventory and discuss the differences between using perpetual and non-perpetual inventory.

Business Example



The company uses perpetual inventory.

Most items are controlled by the moving average valuation method.

However, some items are controlled by standard price and some are controlled by the FIFO method.

- The company uses perpetual inventory.
- Most items are controlled by the moving average valuation method.
- However, some items are controlled by standard price and some are controlled by the FIFO method.
- In our previous business examples in this course, we have always used the moving average valuation method. We have looked at how the item costs have been posted in the purchasing and sales business process. Now we will create some items with the other two methods and see the difference in inventory cost postings.

Perpetual or Non-Perpetual Inventory



Two choices for defining inventory valuation:

- **Perpetual Inventory system**
 - Inventory transactions affect both stock levels and value
 - Automatic entries created in the general ledger

- **Non-perpetual inventory system**
 - Automatic inventory transactions affect only the inventory levels
 - No effect on stock value
 - No automatic entries in the general ledger

- When you set up SAP Business One, you need to define how to control the inventory valuation according to business needs and local legal settings.
- You have two choices for defining inventory valuation.
- A perpetual inventory system or a non-perpetual inventory system.
- A perpetual inventory system reflects the value of inventory postings in terms of monetary transactions in the accounting system. These monetary transactions are carried out when items defined as inventory items are received or released from stock.
- In a perpetual inventory system, inventory transactions affect both stock levels and stock value. Automatic journal entries for the change in stock value are created in the general ledger.
- In our course's business example, we work with a perpetual inventory system so this is what you see in the demonstrations and in the exercises.
- The other choice is to use a non-perpetual inventory system in which sales, purchasing, inventory, and production transactions automatically create inventory transactions which affect only the inventory levels and have no effect on the stock value. Transactions in a non-perpetual inventory system do not generate automatic inventory-related monetary entries directly into the general ledger. However, it is possible to get an estimate of inventory value using different inventory reports.

Setup for Perpetual Inventory

Basic Initialization

Use Perpetual Inventory

Item Groups Valuation Method ▼

Manage Item Cost per Warehouse

- If you choose to use perpetual inventory, you need to make the configuration settings during basic initialization, before posting any transactions.
- To activate perpetual inventory, select the checkbox on the Basic Initialization tab of the Company Details window. This transaction is under System Initialization in the Administration module.
- You can then set a default valuation method for your company. This default will be used whenever you create a new item group. You can, of course, change the default in the item group or any item assigned to the item group.
- You also have the option to manage item costs separately for each warehouse, rather than setting an item's cost at the company level. This can be useful when you operate in several regions with varying cost levels.
- Once you have activated perpetual inventory, each transaction that receives or issues inventory items is reflected in the inventory related G/L accounts.
- After the first inventory transaction is posted, the option to choose either perpetual or non-perpetual inventory is disabled, and its status cannot be changed.

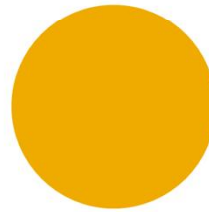
Monetary Value of Inventory Postings

Inventory Transactions



Good Receipt PO

Inventory Account Balance



- Let us quickly review the monetary effects on stock value of an inventory item when using perpetual inventory.
- As you purchase an inventory item, the balance of the inventory account increases.

Monetary Value of Inventory Postings

Inventory Transactions

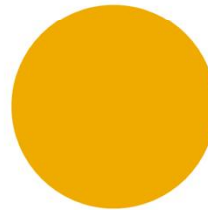


Good Receipt PO



Delivery

Inventory Account Balance



- When you sell this item and deliver it to a customer, the balance of the inventory account decreases.
- We see that values increase as stock quantity grows and values decrease as stock quantity shrinks.
- The value of an item received into inventory is based on either a purchase price or a fixed value.
- However, how do we determine the value of the item when it is issued?
- The way we determine the items value at sales is by using a valuation method.

Inventory Valuation Methods



Moving Average Price



First In – First Out (FIFO)



Standard Cost

- SAP Business One provides 3 valuation methods for calculating inventory value: Moving average, FIFO, and Standard Cost.
- Valuation methods are basically formulas for how you determine the cost of the units that you sell. These formulas control the inventory cost of an item if you are using perpetual inventory.
- If you are using perpetual inventory, you choose one of three methods for any given item.
 - Moving Average
 - First in – First Out, generally known as FIFO
 - Standard Price
- Let us take a look at how each method works.

Inventory Valuation Methods



Moving Average Price

5 items @ \$10 Total inventory \$50 Moving average price \$10
5 items @ \$20 Total inventory \$150 Moving average price \$15



First In – First Out (FIFO)



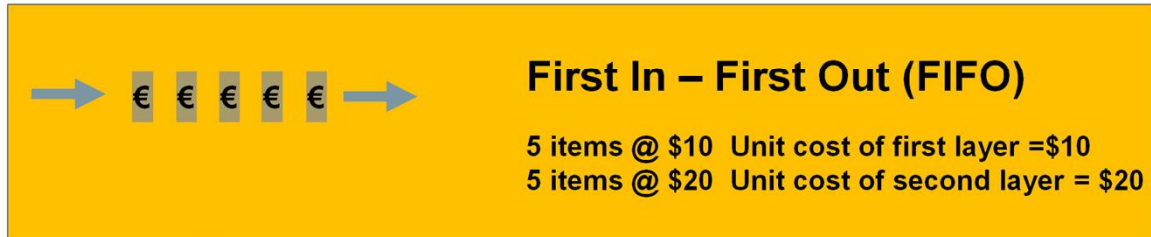
Standard Cost

- First, we will look at the moving average method.
- When using this method, the system calculates the moving average price by dividing the total value of the goods by the quantity in stock.
- For example, let us say you buy 5 items for 10 dollars each. You have 5 items worth \$50. The moving average price is 10 dollars.
- Then you spend \$100 to buy another 5 items for 20 dollars.
- Total inventory value is now \$150 and you have a quantity of 10 in stock. Therefore, the total value of the goods divided by the quantity in stock gives us a moving average price of \$15.
- The moving average price is used as the item cost when this item is sold or otherwise issued from the warehouse.

Inventory Valuation Methods



Moving Average Price



Standard Cost

- When you use the FIFO Method, the system calculates the item cost as the cost of the oldest unit on hand.
- The theory behind this valuation method is the same as the name: first in, first out. The first items received into stock are the first items to be issued. This is a useful method if you have inventory items with expiration dates. You want to sell the items before the expiration date, so you always sell the oldest items first.
- How does this valuation method work?
- The system stores each good receipt in the inventory in a separate layer.
- When you post any good issue, such as when you sell an item, the system uses the price from the oldest layer, from the second-oldest, and so on.
- Let us say you buy a quantity of 5 at 10 dollars each. The unit cost of the first layer is \$10 each.
- You then buy a second quantity of 5 at 20 dollars each. The oldest layer's cost remains 10 dollars. However, you also now have a newer layer with an unit cost of \$20.
- When you sell the item, the system uses the oldest layer first. So the first quantity of 5 sold has a item cost of \$10.

Inventory Valuation Methods



Moving Average Price



First In – First Out (FIFO)



Standard Cost

Standard price set at \$10
Item cost = \$10

- When you select the standard price option, you manually enter a fixed price into the item master record.
- The system uses this price for all stock movements.
- This is a logical method to use for items which you produce in-house.
- Here is an example. You set the standard price at 10 dollars. Therefore, when an item is received into stock it is valued at 10 dollars. When it is sold, the item cost remains 10 dollars.
- Setting a standard price is like a making a royal decree. You decide what the item is worth. You specify the unit cost. The item cost always equals the standard price set in the item master record.
- Once you set the standard price at 10 dollars, the unit cost remains 10 dollars.
- If you buy this item for 11 dollars, the 1 dollar difference is posted to a variance account and the item cost remains 10 dollars.
- It is possible to adjust a standard price item's cost through inventory revaluation on a periodic basis.
- An example of a standard cost item might be a service. You could have a service that you sell. The service is defined as a non-inventory item, but you can set the valuation method as standard on the Inventory Data tab of the item master. Then, when you base the gross profit on the item cost, the base price for this non-inventory item is included in the calculation of gross profit for the service.

Inventory Valuation Methods



Moving Average Price



First In – First Out (FIFO)



Standard Cost

- Let us take a look at how each method works by working through a slightly more detailed example.
- This time we will look at how each method works when an item is purchased multiple times with varying purchase prices.

Moving Average - Example



Purchasing

- Purchase 5 Units for 100 each
- Unit cost = 100 Inventory Value = 500



Purchasing

- Purchase 5 Units for 200 each
- Current Unit cost = 150 New Inventory Value = 1500



Sales

- Sell 7 for sales price of 300
- Current Unit cost = 150 Total COGS = 1050
New Inventory value 450

Item cost =
total inventory
divided by
on-hand quantity

- Remember that the formula for moving average is that item cost is calculated by dividing the total inventory value by the on-hand quantity.
- Here we see a purchase of 5 units for 100 each. The inventory value at this point is 500. The moving average cost at this point is 100. That is the inventory total value of 500 divided by the quantity of 5.
- Then a second purchase of 5 is made, this time for 200 each for a total purchase cost of 1000.
- Now the total inventory value is 1500. There is a quantity of 10 in stock. 1500 divided by 10 gives us an item cost of 150.
- We sell a quantity of 7 to a customer for 300.
- The selling price is not important in calculating cost.
- The cost of each item in stock at the time of sale is 150. Therefore the total cost of goods sold is calculated as 7 multiplied by 150, that is 1050.
- The inventory value is now 1500 minus 1050 resulting in the new inventory value 450. If you divide 450 by the remaining quantity of 3 you will get the unit cost of 150.
- You have seen the moving average method and its consequences in the sales and purchasing exercises and demos of this course.

FIFO - Example

- Item cost managed by layers



Purchasing

- Purchase 5 Units for 100 each
- Inventory Value = 500

- Each receipt transaction creates a new layer



Purchasing

- Purchase 5 Units for 200 each
- Inventory Value = 1500

- Each release transaction uses first available open layer



Sales

- Sell 7 for sales price of 300
- Total COGS = 900 (5 x 100 + 2 x 200)
- New Inventory Value 600 (3 x 200)

- In the FIFO method, the item cost is managed by layers for each item.
- Each inventory receipt transaction creates a "layer" of quantities linked to costs.
- Each inventory release transaction uses quantities and their corresponding costs from the first open layer.
- So in our example, again we purchase 5 units at 100. The goods receipt PO creates a FIFO layer with 5 units costing 100 each. The total inventory value is 500.
- We purchase a second quantity of 5 units at 200 for a total value of 1000. The second goods receipt PO creates a second FIFO layer for these 5 units costing 200 each.
- The inventory value is now $1500 - 500 + 1000$.
- We sell a quantity of 7 for the sales price of 300. Remember sales price is not important in determining item cost.
- The rule in FIFO is that the first (oldest) layer is used first.
- So the first 5 issued from stock are from the first layer and have a cost of 100 each. And the next 2 are from the second layer with a cost of 200 each.
- The total cost of goods sold is calculated as 5 multiplied by 100 that is 500, plus 2 multiplied by 200 that is 400 for a total of 900.
- When subtracting the 900 total cost of goods sold from 1500, we get the new inventory value of 600.
- Please note that we do not have one general item cost for the item master data like in the other valuation methods as the item cost is managed by layers for each item.

Standard Cost - Example



Purchasing

- Set manually unit cost to 100
- Purchase 5 Units for 100 each. Inventory Value = 500



Purchasing

- Purchase 5 Units for 200 each
- Current Unit cost = 100
- New Inventory Value = 1000 (Variance of 500)



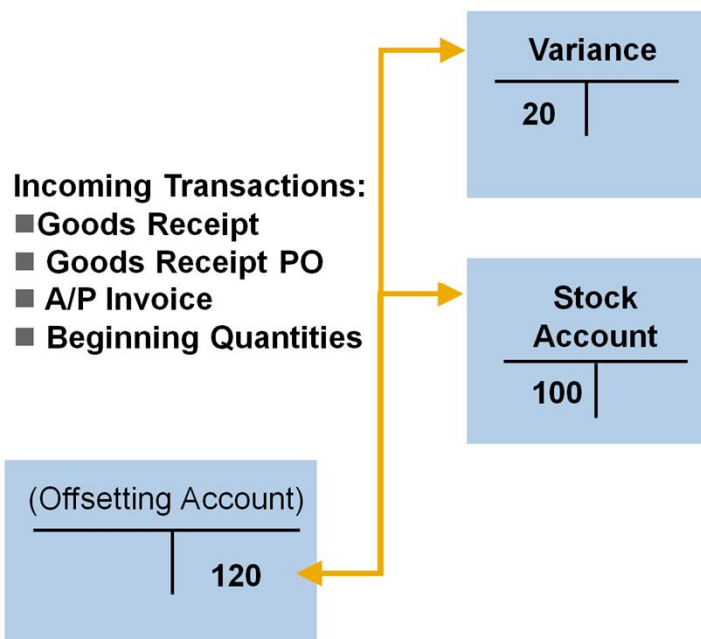
Sales

- Sell 7 for sales price of 300
- Current Unit cost = 100 Total COGS = 700
- New Inventory value 300

- Standard Cost Method assumes a constant stock value
- Unit cost remains the same regardless of purchase price
- The difference between purchase price and standard cost posts to a variance account.

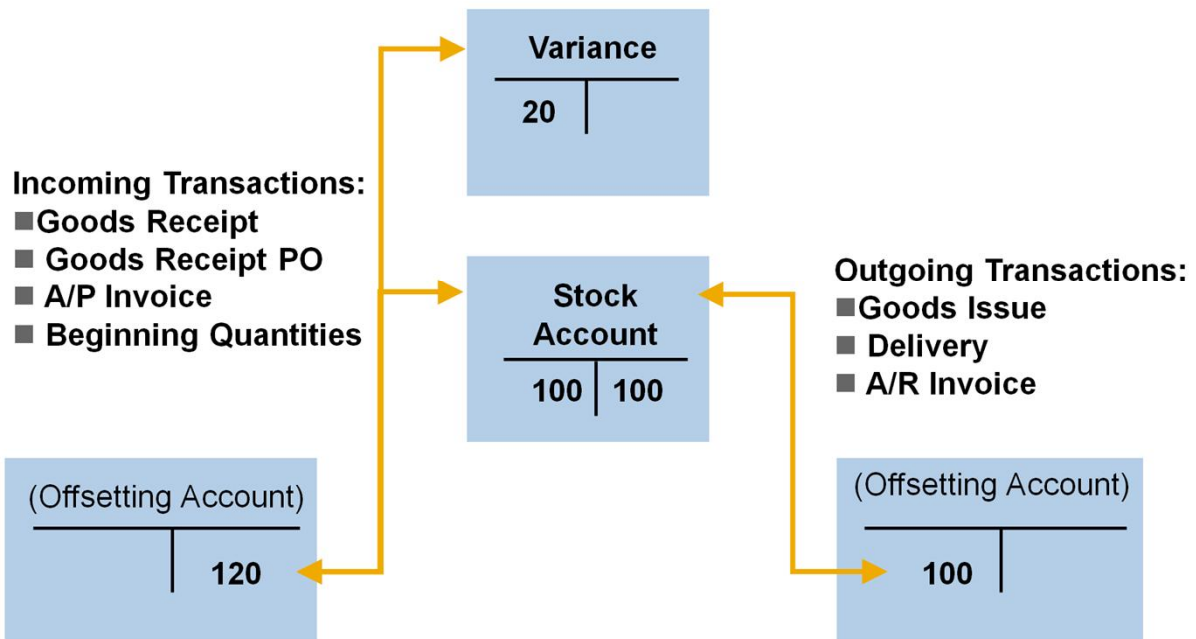
- The standard cost valuation method assumes a constant stock value, regardless of the purchase price.
- With the standard cost method, the unit cost is determined manually when you setup the item.
- Variances that occur due to a different purchase price are recorded to a variance account, and the unit cost is not affected.
- So in our example, the unit cost is set to 100.
- We purchase 5 units at 100 each and then we purchase 5 units at 200 each.
- It does not matter what the purchase price is. The value of each unit is set to the standard cost of 100.
- We have 10 inventory. We multiply 10 by the standard cost of 100 to find the total value of the inventory is 1000.
- The different in cost in the second purchasing transaction between the standard cost of 100 each and the purchase price of 200 each is registered to a variance account.
- The inventory value after the sales transaction is also set by the fixed unit cost of 100.
- The 7 units sold are multiplied by 100 for a total cost of goods sold of 700.
- When subtracting this 700 total cost of goods sold from the inventory value of 1000, you get 300 as the new inventory value.

Stock Movements with Standard Price



- As we discussed previously, if an item is managed with standard price valuation, a variance account is needed when posting any kind of goods receipt (goods receipt without reference, goods receipt PO, A/P invoice, beginning quantity). The variance account receives the price difference between the standard price and the price in the document.
- Here is a graphic look at what happens when you receive an item with a standard price.
- In this example, the value of the item when received is 120. However, our item's standard price is set at 100.
- The journal entry will post the amount of 120 to the appropriate account depending on the type of transaction used – here we have labeled it as the offsetting account.
- Since the standard price is 100, 100 is posted to the stock account for the one unit purchased.
- The difference of 20 is posted to the variance account.

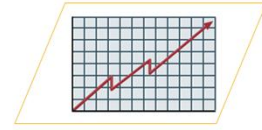
Stock Movements with Standard Price



- No matter what the actual cost of the item was initially, the unit value of item in the stock account is always equal to the standard price. In this case, the unit price of 100.
- Therefore, when the item is issued out of the warehouse, on a goods issue, delivery or A/R invoice, the cost of goods sold for each unit will always be the same as the standard price, in this example 100.

Inventory Audit Report

Generating Inventory Audit Reports:



- Provides an audit trail for the posted inventory transactions in the chart of accounts.
- Makes comparisons between the accounting view and the logistics view.
- Explains the value changes in inventory accounts.
- Does not recalculate the item cost but displays the information from the database.
- Displays only inventory related transactions in the report.

- A useful report for companies using perpetual inventory is the Inventory Audit report.
- This report provides an audit trail for the posted inventory transactions in the chart of accounts.
- You can use this report to make comparisons between the accounting view (inventory balance accounts) and the logistics view (inventory value displayed by the audit report). The report explains the value changes in inventory accounts.
- The report does not recalculate the item cost but displays the information from the database. In addition, only inventory related transactions are displayed in the report. Transactions with non-inventory items or drop-ship warehouses are not displayed.
- Note that the Inventory Audit report is available only for companies using the perpetual inventory system. To create what-if scenarios, use the Inventory Valuation Simulation report.

Non-Perpetual Inventory System

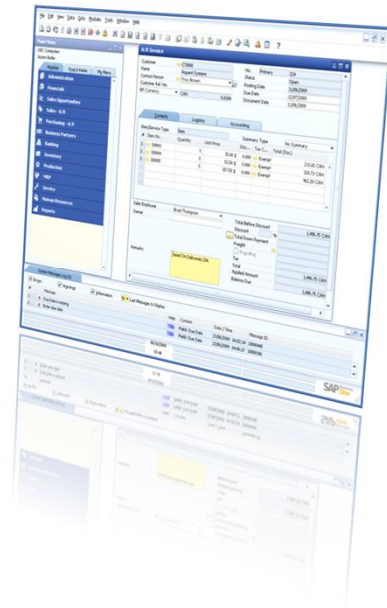


Definition:

- An inventory management system in which costs of inventories are not maintained on a constant basis.
- Transactions which reflect the inventory levels do not generate inventory-related monetary entries directly into the general ledger.

- We have talked a lot about perpetual inventory. Let us take another look at the alternative method.
- A non-perpetual inventory system is an inventory management system in which costs of inventories are not maintained on a constant basis.
- In a non-perpetual inventory system, sales, purchasing, inventory, and production transactions, which reflect the inventory levels, do not generate inventory related monetary entries directly into the general ledger.
- Therefore, the inventory value of a company is not revalued on every inventory release or receipt. Instead, the inventory account balance is updated by manual journal entry once in every accounting period or after a physical inventory count.
- The inventory value can be calculated using the inventory valuation report.
- You must set up a non-perpetual inventory system during the basic initialization of the company, before any transactions have been posted. Once transactions have been posted, you cannot change the inventory system used for that company.
- Note that some countries have a non-perpetual inventory system as their default inventory management system, such as Germany, Israel, Italy, Panama, South Africa, and Switzerland.

Demo – Valuation Methods



- We will demo the First In First Out and Standard Cost methods.

Summary



Here are some key points:

- You have two choices for defining inventory valuation: perpetual inventory or non-perpetual inventory.
- A perpetual inventory system automatically controls both stock levels and stock value by creating automatic journal entries for accounts in the general ledger when items defined as inventory items are received or released from stock.
- In a non-perpetual inventory system, inventory transactions are automatically created but affect only the inventory levels and have no effect on the stock value.
- Three methods are available for calculating item cost: Moving Average, First In First Out (FIFO), and Standard Cost.

- You have two choices for defining inventory valuation: perpetual inventory or non-perpetual inventory.
- A perpetual inventory system automatically controls both stock levels and stock value by creating automatic journal entries for accounts in the general ledger when items defined as inventory items are received or released from stock.
- In a non-perpetual inventory system, sales, purchasing, inventory, and production transactions automatically create inventory transactions which affect only the inventory levels and have no effect on the stock value. However, it is possible to get an estimate of inventory value using different inventory reports.
- Three methods are available for calculating Moving average, FIFO, and Standard Cost.

Summary



Here are some key points:

- Using Moving Average: Item cost = total inventory divided by on-hand quantity.
- With FIFO, item cost is managed by layers. Each receipt transaction creates a new layer. Each issuing transaction uses the first available open layer.
- The Standard Cost Method assumes a constant stock value. Item cost remains the same regardless of purchase price. Any difference between purchase price and standard cost posts to a variance account.
- The inventory audit report is useful for viewing changes to inventory quantity and value in inventory accounts caused by inventory transactions.

- Using the Moving Average method: Item cost equals total inventory divided by on-hand quantity.
- With FIFO, item cost is managed by layers. Each receipt transaction creates a new layer. Each issuing transaction uses the first available open layer.
- The Standard Cost Method assumes a constant stock value. Item cost remains the same regardless of purchase price. Any difference between purchase price and standard cost posts to a variance account.
- The inventory audit report is a useful way to view changes to inventory quantity and value in inventory accounts caused by inventory transactions. You can use this report to make comparisons between the accounting view (inventory balance accounts) and the logistics view (inventory value displayed by the audit report).

Thank you



You have completed the topic for valuation methods.

Thank you for your time!

- You have completed the topic for valuation methods for items in perpetual inventory. Thank you for your time!

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