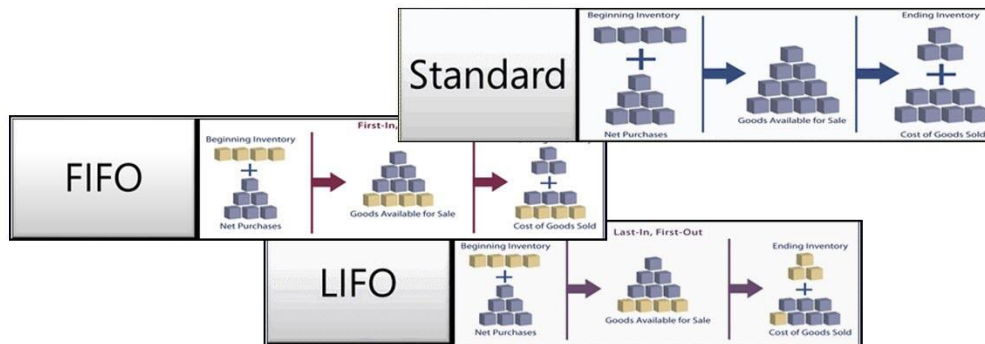




Average Costing Overview

A Look at the Inventory Average Costing Method

Knowledge Base Article



This document describes the intended features and technology for TRAVERSE 11 as of August, 2016. Features and technology are subject to change and there is no guarantee that any particular feature or technology described in this presentation will be present in this or subsequent versions of TRAVERSE.

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Introduction

Inventory valuation is the cost associated with your inventory at the end of your reporting period. The valuation affects the cost of the goods you sell, as well as the amount of your profit. There are multiple ways to calculate the value of your inventory.

Some costing methods are straight-forward and based solely on the price you paid for the inventory item when you purchased it. Other costing methods depend on a calculation of the costs of inventory items, and can be affected by various transactions involving inventory items. This article explains how TRAVERSE utilizes the average costing method. Use this information when choosing the costing method that works the best for your business.

Costing Methods in TRAVERSE

You choose your costing method via the Inventory Business Rules in System Manager Company Setup. TRAVERSE allows you to select one of four different costing methods:

FIFO (First In, First Out): This costing method assumes items are sold to a customer in the same order as they are purchased by your company. That is, the oldest inventory is sold first. The oldest items purchased are the first ones sold.

LIFO (Last In, First Out): This costing method assumes the newest items purchase by your company are the first items sold to a customer. That is, the newest inventory is sold first. The most recent items purchased are the first ones sold. **Note:** LIFO is not allowed for book reporting under International Financial Reporting Standards (IFRS), and the US accountancy board is considering the deprecation of this method.

Standard Cost: This costing method substitutes an estimated cost for the actual cost of an item. The cost is periodically re-evaluated. This method results in variances between the Standard cost of an item and the Actual cost of the item. One way to create a standard cost is to calculate the average of the most-recent actual costs.

Average Cost: This costing method is characterized by the cost of any new inventory purchased being rolled into the cost of existing inventory to derive a new average cost. This results in a new average cost calculated every time the inventory quantity of an item is increased. This includes new purchases as well as reversing an inventory transaction that reduced inventory quantity, such as reversing the issue of an item to a manufacturing job.

Costing Method Comparison

These are basic examples of how each costing method affects the Cost Of Goods Sold (COGS). These examples are provided only as a comparison between the various methods.

Scenario:

Beginning inventory: 0 items

Day 1: Purchase 100 items at \$10 per item = \$1,000

Quantity on Hand: 100 Actual cost = \$1,000

Day 2: Purchase 200 items at \$10.75 per item = \$2,150

Quantity on Hand: 300 Actual cost = \$3,150

Day 2: Edit the Unit Cost of the purchase in Day 2 from \$10.75 to \$12

Quantity on Hand: 300

Day 3: Sell items: Qty: 250 Price: \$15 per item = \$3,750

Quantity on Hand: 50

Day 4: Sell items: Qty 30 Price: \$20 per item = \$600

Quantity on Hand: 20

Day 4: Delete/reverse the sale: Qty 30 Price: \$20 per item

Quantity on Hand: 50

Gross Profit = Sales - COGS

FIFO (First In, First Out) Costing

Day 1

Purchase 100 items at \$10 per item Actual cost = \$1,000

Inventory value: Qty 100 @ \$10 (actual cost) = \$1,000

Day 2

Purchase 200 items at \$10.75 per item Actual cost = \$2,150

Inventory value: Qty 200 @ \$10.75 (actual cost) = \$2,150

Quantity on Hand: 300 Actual cost = \$3,150

Edit Unit Cost of purchased items from \$10.75 to \$12

Inventory Value: Qty 200 @ 12 (new cost) = \$2400

Quantity on Hand: 300 Actual Cost = \$1000 + \$2400 = \$3400

Day 3

Sell items: 250 items @ \$15 each = \$3,750

COGS: of the 250 items sold: [100 @ \$10 (first in)] + [150 @ \$12 (last in)] = **\$2,800**

Gross Profit = \$3,750 (sales) - \$2,800 (COGS) = **\$950**

Quantity on Hand: 50 (from most recent purchase) Ending Inventory value: 50 @ \$12 (actual cost) = \$600.00

Day 4

Sell items: 30 items @ \$20 each = \$600

COGS: of the 30 items sold: [30 @ \$12 (last in)] = **\$360**

Gross Profit = \$600 (sales) - \$360 (COGS) = **\$240**

Quantity on Hand: 20 (from most recent purchase) Ending Inventory value: 20 @ \$12 (actual cost) = \$240.00

Delete the sale: Qty: 30 Price: \$20 per item

Quantity on Hand: 50 (from most recent purchase) Ending Inventory value: 50 @ \$12 (actual cost) = \$600

LIFO (Last In, First Out) Costing**Day 1****Purchase** 100 items at \$10 per item Actual cost = \$1,000

Inventory value: Qty 100 @ \$10 (actual cost) = \$1,000

Day 2**Purchase** 200 items at \$10.75 per item Actual cost = \$2,150

Inventory value: Qty 200 @ \$10.75 (actual cost) = \$2,150

Quantity on Hand: 300 Actual cost = \$3,150

Edit the Unit Cost of purchased items from \$10.75 to \$12

Inventory Value: Qty 200 @ 12 (new cost) = \$2400

Quantity on Hand: 300 Actual Cost = \$1000 + \$2400 = \$3400

Day 3**Sell** items: 250 items @ \$15 each = \$3,750

COGS: of the 250 items sold: [200 @ \$12 (last in)] + [50 @ \$10 (first in)] = \$2,900

Gross Profit = \$3,750 (sales) - \$2,900 (COGS) = \$850

Quantity on Hand: 50 (from oldest purchase) Ending Inventory value: 50 @ \$10 (actual cost) = \$500.00

Day 4**Sell** items: 30 items @ \$20 each = \$600

COGS: of the 30 items sold: [30 @ \$10 (last in)] = \$300

Gross Profit = \$600 (sales) - \$300 (COGS) = \$300

Quantity on Hand: 20 (from oldest purchase) Ending Inventory value: 20 @ \$10 (actual cost) = \$200.00

Delete the sale: Qty: 30 Price: \$20 per item

Quantity on Hand: 50 (from oldest purchase) Ending Inventory value: 50 @ \$10 (actual cost) = \$500

Standard Costing**Day 1**

Standard Cost for item = \$10.40

Purchase 100 items at \$10 per item Actual cost = \$1,000

Inventory value (standard cost valuation): Qty 100 @ \$10.40 (standard cost) = \$1,040

Day 2**Purchase** 200 items at \$10.75 per item Actual cost = \$2,150

Inventory value: Qty 200 @ \$10.40 (standard cost) = \$2,080

Quantity on Hand: 300 Actual cost = \$3,150 (standard cost valuation = $300 * \$10.40 = \$3,120$)**Edit** the Unit Cost of the purchased items from \$10.75 to \$12

Inventory Value: Qty 200 @ 12 (new cost) = \$2400

Quantity on Hand: 300 Actual Cost valuation = \$1000 + \$2400 = \$3400

(standard cost valuation = $300 * \$10.40 = \$3,120$)**Day 3****Sell** items: 250 items @ \$15 each = \$3,750

COGS: of the 250 items sold: 250 item @ \$10.40 (standard cost) = \$2,600

Gross Profit = \$3,750 (sales) - \$2,600 (COGS) = \$1,150

Quantity on Hand: 50 Ending Inventory value: 50 @ \$10.40 (standard cost) = \$520.00

Day 4**Sell** items: 30 items @ \$20 each = \$600

COGS: of the 30 items sold: 30 item @ \$10.40 (standard cost) = \$312

Quantity on Hand: 20 Ending Inventory value: 20 @ \$10.40 (standard cost) = \$208.00

Delete the sale: Qty: 30 Price: 20 per item

Quantity on Hand: 50 Ending Inventory value: 50 @ \$10.40 (standard cost) = \$520

Average Costing (TRVERSE Standard only – for TRVERSE Global see [here](#))*From Figure 1:**If Qty on Hand = 0 then New Avg Cost = Transaction Unit cost***Day 1****Purchase** 100 items at \$10 per item Actual cost = \$1,000

Average cost for item: \$10

Inventory value: Qty 100 @ \$10 (average cost) = \$1,000

*From Figure 1:**If Qty on Hand > 0 then New Avg Cost = (Transaction Unit Cost * Transaction Qty) + (Current Avg Cost * Qty on Hand)/(Transaction Qty + Qty on Hand)***Day 2****Purchase** 200 items at \$10.75 per item Actual cost = \$2,150New Avg cost for item: $(\$10.75 * 200) + (\$10 * 100) / (200 + 100) = (\$2,150 + \$1,000) / 300 = \10.50

Inventory value: Qty 200 @ \$10.50 (average cost) = \$2,100

Quantity on Hand: 300 Average cost valuation = $300 * \$10.50 = \$3,150$ *From Figure 1:**If you EDIT a transaction that increased inventory quantity, first apply the Decrease Inventory Quantity transaction, then apply the Increase Inventory Quantity transaction****Edit** the Unit Cost of the purchased items from \$10.75 to \$12**Step 1** Decrease Inventory Qty transaction (same as new sale):

COGS: of the 200 items "sold": 200 items @ \$10.50 (average cost) = \$2,100

COGS Adjustment for this transaction = Transaction Qty * (Avg Cost – Transaction Unit Cost) = $200 * (10.50 - 10.75) = -\50

Average cost isn't changed for a new sale

Step 2 Increase Inventory Qty (same as purchase)

"Purchase" 200 items at \$12 per item

Transaction Value: Qty 200 @ \$12 (new cost) = \$2,400

Quantity on Hand: 300 Actual Cost valuation = \$1,000 + \$2,400 = \$3,400

Recalculate: New Avg cost for item: $(\$12 * 200) + (\$10.50 * 100) / (200 + 100) = (\$2,400 + \$1,050) / 300 = \11.50 Average Cost valuation = $300 * \$11.50 = \$3,450$ **Day 3****Sell** items: 250 items @ \$15 each = \$3,750COGS: of the 250 items sold: 250 item @ \$11.50 (average cost) = **\$2,875**Gross Profit = \$3,750 (sales) - \$2,875 (COGS) = **\$875**

Average Cost = \$11.50 (Average Cost isn't changed for a new sale)

Quantity on Hand: 50 Ending Inventory value: 50 @ \$11.50 (average cost) = \$575

COGS Adj for this transaction = **0** (COGS Adj is calculated based on Transactions that decrease Inventory Quantity of an item, which is the sale of 250 items * (current avg cost of \$11.50 – transactional unit cost of \$11.50).)COGS Adj accumulation = $-\$50 + 0 = -\50 (The COGS Adjustment is accumulated until the transactions which generated the COGS Adjustment are posted.)**Day 4****Sell** items: 30 items @ \$20 each = \$600COGS: of the 30 items sold: 30 @ \$11.50 (Average Cost) = **\$345**Gross Profit = \$600 (sales) - \$345 (COGS) = **\$255**

Average Cost = \$11.50 (Average Cost isn't changed for a new sale)

Quantity on Hand: 20 Ending Inventory valuation: 20 @ \$11.50 (Average cost) = \$230

COGS Adj = $-\$0$ (COGS Adj is calculated based on Transactions that decrease Inventory Quantity of an item, which is the sale of 30 items * (current avg cost of \$11.50 – transactional unit cost of \$11.50).)

COGS Adj accumulation = $-\$50 + 0 + 0 = -\50 (The COGS Adjustment is accumulated until the transactions which generated the COGS Adjustment are posted.)

From Figure 1:

If you DELETE a transaction that decreased inventory quantity of an item, the process is same as Transaction that Increase inventory quantity of an item.

*If Qty on Hand > 0 then New Avg Cost = (Transaction Unit Cost * Transaction Qty) + (Current Avg Cost * Qty on Hand)/(Transaction Qty + Qty on Hand)*

***Delete** the sale: Qty: 30 Price: \$20 per item

New Avg cost for item: $(\$11.50 * 30) + (\$11.50 * 20)/(30+20) = (\$345 + \$230)/50 = \$11.50$ (Average Cost is calculated based on Transactions that increase Inventory Quantity of an item. In this scenario the average cost is calculated as equal to the previous average cost due to the transaction cost being the same as the previous average cost)

No COGS Adjustment is generated for this transaction.

COGS Adjustment accumulation = $-\$50 + 0 + 0 + 0 = -\50 (The COGS Adjustment is accumulated until the transactions which generated the COGS Adjustment are posted.)

Quantity on Hand: 50 Ending Inventory Valuation 50 @ \$11.50 (average cost) = \$575

Average Cost

Typically, the average cost of an item is only updated when a transaction increases inventory quantities, such as a purchase. The average cost can also be adjusted if a transaction that decreases inventory, such as the sale of an item, is deleted/reversed or edited.

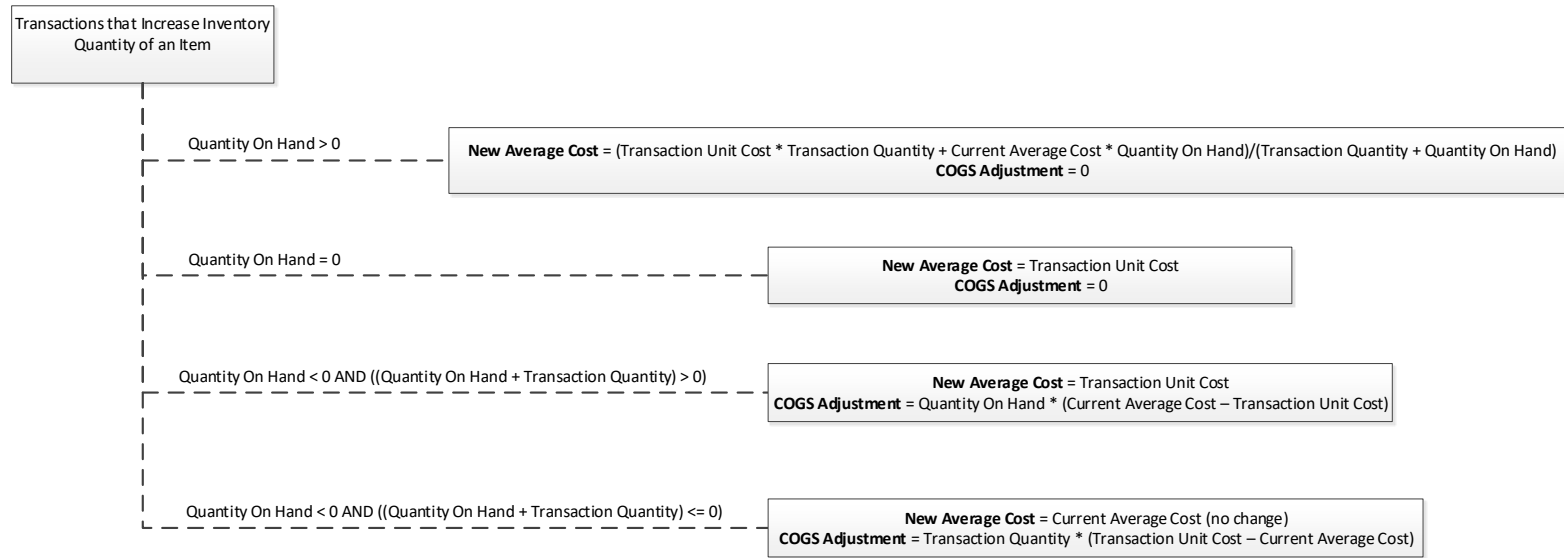
See the following diagram for details of how TRVERSE calculates an item's average cost.

Note: All quantities are in the base unit of measure. All unit costs are for the base unit of measure.

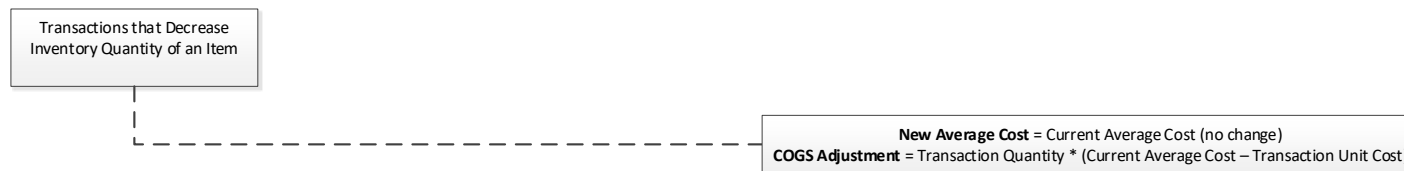
Transactions and their effect on the Average Cost of an Inventory item

Figure 1

The Effects of Inventory Transactions on the **Average Cost** of an Item



If you DELETE a transaction that increased inventory quantity of an item, the process is same as Transaction that Decrease inventory quantity of an item.
 If you EDIT a transaction that increased inventory quantity, first apply the Decrease Inventory qty transaction, then apply the Increase Inventory qty transaction.



If you DELETE a transaction that decreased inventory quantity of an item, the process is same as Transaction that Increase inventory quantity of an item.
 If you EDIT a transaction that decreased inventory quantity, first apply the Increase Inventory qty transaction, then apply the Decrease Inventory qty transaction.

For every transaction that increases or decreases the inventory quantity of an item: **LIFO/FIFO Cost** = Transaction Unit Cost

For every transaction that increases or decreases the inventory quantity of an item: **Standard Cost** = Established Standard Cost for the item

Inventory Average Cost Adjustments

There are a number of functions and actions that affect the average cost. The way the function affects the average cost depends on how the action affects inventory. These are the processes TRVERSE uses to calculate the New Average Cost. You can see more details in Figure 1 on page 9.

Note: These average costing calculations will only affect serialized items if the general costing method is used for those items.

PO Receipt

New PO Receipt increases inventory quantities. The system uses the process for Transactions that Increase Inventory Quantity of an Item.

Delete a PO Receipt decreases inventory quantities. The system uses the process for Transactions that Decrease Inventory Quantity of an Item.

Edit a PO Receipt, where quantity is the received quantity that has not been invoiced, has multiple steps:

1. Remove the original quantity and cost of the item, using the process for Transactions that Decrease Inventory Quantity of an Item.
2. Add new quantity and cost for the item, using the process for Transactions that Increase Inventory Quantity of an Item.

PO Invoice (TRVERSE Standard only – for TRVERSE Global see [here](#))

New PO Invoice requires multiple steps:

1. Remove invoiced quantity at receipt cost using the process for Transactions that Decrease Inventory Quantity of an Item.
2. Add the invoiced quantity at invoice cost using the process for Transactions that Increase Inventory Quantity of an Item.

Delete a PO Invoice requires multiple steps:

1. Remove invoiced quantity at invoice cost using the process for Transactions that Decrease Inventory Quantity of an Item.
2. Add the invoiced quantity at cost when received using the process for Transactions that Increase Inventory Quantity of an Item.

Edit a PO Invoice has multiple steps:

1. Remove the original invoiced quantity at original invoiced cost using the process for Transactions that Decrease Inventory Quantity of an Item.
2. Add the original invoiced quantity at receipt cost using the process for Transactions that Increase Inventory Quantity of an Item.
3. Remove the new invoiced quantity at receipt cost using the process for Transactions that Decrease Inventory Quantity of an Item.
4. Add the new invoiced quantity at the new invoice cost using the process for Transactions that Increase Inventory Quantity of an Item.

PO Return Authorization

New PO Return authorization removes items from inventory using the process for Transactions that Decrease Inventory Quantity of an Item.

Delete a PO Return Authorization puts items back into inventory using the process for Transactions that Increase Inventory Quantity of an Item.

Edit a PO Return Authorization handles a quantity that is returned but not debited with multiple steps:

1. Add the original quantity and cost using the process for Transactions that Increase Inventory Quantity of an Item.
2. Remove the new quantity and cost using the process for Transactions that Decrease Inventory Quantity of an Item.

PO Debit Memo (TRAVERSE Standard only – for TRAVERSE Global see [here](#))

New PO Debit Memo removes items from inventory with multiple steps:

1. Add the debited quantity at returned cost using the process for Transactions that Increase Inventory Quantity of an Item.
2. Remove the debited quantity at debit cost using the process for Transactions that Decrease Inventory Quantity of an Item.

Delete a PO Debit Memo adds items back into inventory with multiple steps:

1. Remove debited quantity at debited cost using the process for Transactions that Decrease Inventory Quantity of an Item.
2. Add the debited quantity at return cost using the process for Transactions that Increase Inventory Quantity of an Item.

Edit a PO Debit Memo is handled with multiple steps:

1. Remove debited quantity at debited cost using the process for Transactions that Decrease Inventory Quantity of an Item.
2. Add the debited quantity at return cost using the process for Transactions that Increase Inventory Quantity of an Item.
3. Add the debited quantity at return cost using the process for Transactions that Increase Inventory Quantity of an Item.
4. Remove debited quantity at debited cost using the process for Transactions that Decrease Inventory Quantity of an Item.

MP Complete Production Order

1. Remove the finished assembly quantity and cost using the process for Transactions that Decrease Inventory Quantity of an Item.
2. Add the completed quantity and cost using the process for Transactions that Increase Inventory Quantity of an Item.

Updating Average Cost

When TRAVERSE updates inventory quantity and history, average cost is updated first. If the transaction decreases inventory quantities **and** is linked to a PO transaction that is drop-shipped, the average cost is **not** updated.

Functions that trigger an inventory average cost update

- AP Transactions -- Transaction type of **Invoice** or **Debit Memo**
- AR Transactions -- Transaction type of **Invoice** or **Credit Memo**
- PO Transactions -- Transaction type of **Invoice, Debit Memo, Receipt, or Return Authorization**
- MP Record Production Activity -- Component type is **Material, Stocked Subassembly, Pulled From Stock Subassembly, or By-product**, as well as activity for assemblies
- SD Transactions
- PS Active Order Processing
- IN Transactions
- IN Location Transfers
- IN Material Requisitions -- Requisition type is **Material Req** or **Material Req Return**
- IN Update Perpetual Inventory
- SO Transactions
- PC Transactions
- BM Confirm/Cancel Work Orders
- WM Adjustments
- WM Location Transfers
- WM Material Requisitions