

Inventory – Cost Flow Assumptions

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In the previous video on inventory, we learned how to record journal entries for the purchase and sale of merchandise inventory. In this video we will learn how to determine cost of goods sold. Before this number has always been provided to you, but now you will learn how to assign costs to inventory and cost of goods sold.

There are four acceptable methods to assign inventory: Specific identification, first-in, first-out, last-in, first-out, and weighted average. Each method assumes a particular pattern for how costs flow through inventory. We will only review two of the methods listed here in this video, the first-in, first-out and the last-in, first-out method.

Before we can begin discussing how costs flow through inventory, let's review the two different methods of recording inventory.

The perpetual method, and the most common method, continually updates the accounting records for transactions involving inventory. On the other hand, the periodic method updates the accounting records only at the end of the time period. Make sure to check with your professor as to which method you will learn. In this video, we will only be reviewing the perpetual method.

Let's begin by looking at the first-in, first out method or FIFO. The first-in, first-out method assumes that cost flow in the order incurred or that the first inventory purchased is the first inventory sold.

Here's an example of the assumption of FIFO. Let's assume that we have three purchases during a period. The boxes represent the inventory. 3 units of inventory were purchased for \$30 each on May 1, 2 units were purchased for \$45 each on May 9 and then 4 units were purchased on May 15 for \$50 each.

FIFO assumes that the first units purchased are the first units that are recorded as sold. So if we sold 4 units, we would use the cost for 3 units from May 1 and 1 unit from May 9.

Or cost of goods sold would be calculated as 3 times \$30 plus 1 times \$45 totaling \$135. Cost of goods represents the earliest or oldest cost from inventory.

The inventory remaining, or ending inventory, after the sale would be 1 cost from May 9 and 4 unit costs from May 15.

Or ending inventory would be \$245: 1 times \$45 plus 4 times \$50. Notice that the ending inventory consists of the costs of the most recent purchases. It is important to make a point here. The cost flow assumptions do not assume that the inventory is actually sold in this order, only that the costs are assigned in this order.

The other cost flow assumption we will cover is the last-in, first-out method or LIFO. The last-in, first-out method assumes that cost flow in the reverse order incurred or that the last inventory purchased is the first inventory sold.

Let's look at the same example as before. The last-in, first-out method assumes that cost flow in the reverse order incurred.

LIFO assumes that the last units purchased are the first units that are recorded as sold. So if we sold 4 units, we would use the cost for all 4 units from the May 15 purchase.

Or cost of goods sold would be calculated as 4 times \$50 or \$200. Cost of goods represents the most recent (or latest) cost from inventory.

The inventory remaining, or ending inventory, after the sale would be 3 cost from May 1 and 2 unit costs from May 9.

Or ending inventory would be \$180: 3 times \$30 plus 2 times \$45. Notice that the ending inventory consists of the costs from the oldest purchases.

Let's look at a more complicated example, one that includes multiple purchases and sales. Here is the purchases and sales for Tyrone's Golf Store. The store began with a balance of 3 units at \$5 a piece or \$15. Then a purchase was made on September 3 of 2 units at \$6 each. On September 5 1 unit was sold at \$18 retail. September 7 involved another purchase of 5 units at \$8 a piece. 6 units were sold at \$18 retail on September 15.

We will begin by recording the beginning balance of 3 units at \$5 or \$15.

Next the first purchase will be recorded. We will enter the date of September 3 and then in the purchase column 2 @ \$6 or \$12. We will need to add this amount to the inventory balance – so beginning inventory of 3 @ \$5 plus new purchases of 2 @ \$6 leaves a balance of \$27.

Now we will record the sale of 1 unit at \$18 retail on September 5. The sale of inventory is recorded in the cost of goods sold account. We sold one unit. Now we need to decide the cost. Look at the inventory balance just prior to sale. Since this is FIFO, we will pick the cost of the oldest inventory. So of these 3 units here – one unit will be sold at \$5. Notice that we did not use the retail of \$18. The retail is what is recorded as revenue.

We will now need to update the inventory balance. Of the beginning units – 1 unit was sold. So 2 units remain at a cost of \$5.

None of the units purchased on September 3rd were sold so they will remain as 2 units @ \$6. The total inventory balance is \$22.

On September 7th there was another purchase of 5 units at \$8 each. This will be recorded in the purchases column and then also updated in the inventory balance. The total inventory available as of September 7 is \$62.

Now we are ready to record the last sale on September 15. On September 15 Tyrone sold 6 units at \$18 retail. The sale on inventory is recorded in the cost of goods sold account. We sold six units. Look at the inventory balance of the previous transaction. Remember that when we sell units assuming the FIFO assumption, the cost of oldest inventory is used first.

So of these 2 units here all be sold at \$5. We will also use the 2 units @ \$6. This is 4 units but we sold 6, so we need to record 2 more units. Of the five units listed here we will record costs of 2 as sold and that leaves 3 remaining. As a double check make sure that these units add up to the units sold of 6.

Ending inventory as of September 15 will be \$24.

Cost of goods sold will be \$5 plus \$10 plus \$12 plus \$16 or \$43. Add all costs included in the cost of goods sold column.

Let's use the same scenario as before and look at how to use the last-in, first-out cost assumption or LIFO.

We will begin by recording the beginning balance of 3 units at \$5 or \$15.

Next the first purchase will be recorded. We will enter the date of September 3 and then in the purchase column 2 @ \$6 or \$12. We will need to add this amount to the inventory balance – so beginning inventory of 3 @ \$5 plus new purchases of 2 @ \$6 leaves a balance of \$27.

Now we will record the sale of 1 unit at \$18 retail on September 5. The sale of inventory is recorded in the cost of goods sold account. We sold one unit. Now we need to decide the cost. Look at the inventory balance just prior to sale. Since this is LIFO, we will pick the most recent cost of inventory. So of the most recent purchase, 2 units, – one unit will be sold at \$6. Notice that we did not use the retail of \$18. The retail is what is recorded as revenue.

We will now need to update the inventory balance. None of the beginning units were sold so 3 @ \$5. Of the \$6 purchase one unit was sold, so one unit remains. The balance as of September 5 is \$21.

On September 7th there was another purchase of 5 units at \$8 each. This will be recorded in the purchases column and then also updated in the inventory balance. The total inventory available as of September 7 is \$61.

Now we are ready to record the last sale on September 15. On September 15 Tyrone sold 6 units at \$18 retail. The sale on inventory is recorded in the cost of goods sold account. We sold six units. Look at the

inventory balance of the previous transaction. Remember that when we sell units assuming the LIFO assumption, the most recent purchase of inventory is used first.

Of the most recent purchase, all 5 units will be sold. We sold 6 units, so we need to record the cost of one more unit or 1 unit at the next purchase price. 1 unit at \$6. This leaves all of the 3 units at \$5 remaining. So this amount will be entered in the inventory balance. As a double check make sure that these units add up to the units sold of 6.

Ending inventory as of September 15 will be \$15.

Cost of goods sold will be \$6 plus \$40 plus \$6 or \$52. Add all costs included in the cost of goods sold column.

We have now reviewed two of the four cost assumption methods. Make sure to ask your professor if you will need to know specific identification and weighted average as these will not be covered in this video.

Remember that the purpose of all of the different cost flow assumptions is so that the company can assign a cost to inventory and cost of goods sold.