



Inventory Accounting Methods: LIFO, FIFO, & Weighted Average Cost

Prepared by: John Raymond, Nandhana Nair, Danny Ye

Date: 1/18/2021

Table of Contents

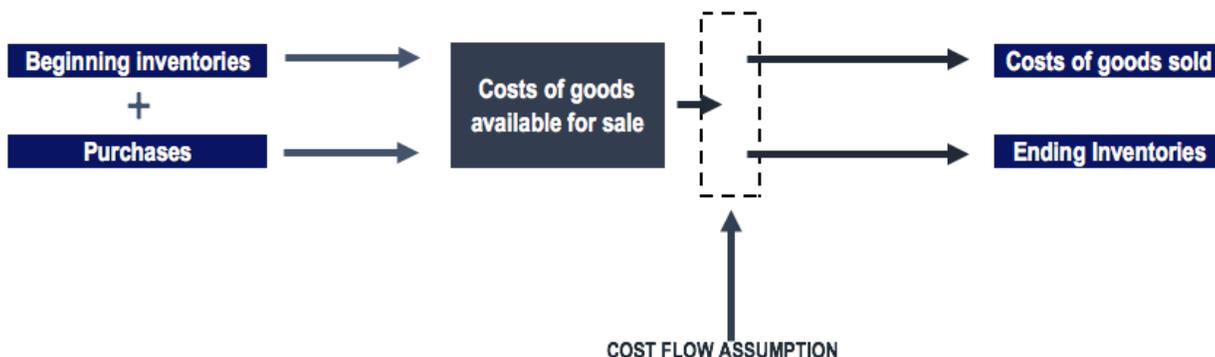
Introduction	3
The FIFO Method	3
The LIFO Method	4
The Weighted Average Cost Method	4
The Specific Identification Method	5
Applied Example	5
Conclusion	7
Works Cited	7

Introduction

Inventory valuation is an important accounting measure to keep track of the monetary asset value of inventory not yet sold at the end of a business' accounting period. Typically, inventory will be the largest business asset on a balance sheet (such as that of a retail or manufacturing business). By evaluating your company's cost of goods sold (COGS) and inventory carrying costs, you can better optimize cost-reductions, purchase schedules, and subsequently, profitability. Inventory value will affect COGS as the stock inventory at the beginning of the period is subtracted by the stock inventory at the end of the period with consideration to purchases (COGS = Beginning Inventory + Purchases - Ending Inventory). If the ending inventory is overvalued, it will in turn inflate the profit of the period and reduce profits of future periods.

The most common methodologies are FIFO, LIFO, and WAC; specific identification is another method that is less commonly utilized. Under GAAP (Generally Accepted Accounting Principles) set by the FASB (Financial Accounting Standards Board), public companies have the flexibility to choose which of the first three methods mentioned above they will file their company reports with. In comparison, international companies under IFRS (International Financial Reporting Standards), issued by the IASB (International Accounting Standards Board), are required to use FIFO only. There has been controversy over the use of LIFO as the Obama administration attempted to challenge the legality of LIFO back in 2014 with the argument that it enabled companies to deflate their incomes as a means to reduce their tax contributions; opponents to LIFO-repeal fear that economic growth would slow as cost of capital would increase.

Inventory management is a highly important process in running a business as it ties into sourcing, storing, and selling. Optimizing businesses to hold the right quantities of stock, in the right place, and at the right time will result in positive impacts on company revenue and expenses. Clear visibility of inventory value will help to enhance customer service and fulfillment, reduce carrying costs, and prevent return losses and product expiration. Most SMBs (small-to-medium sized businesses) will use Google Sheets, Excel, and Microsoft Access to manage their inventory and ordering databases, but other apps such as Cin7, NetSuite, and inFlow also offer proprietary management software which may be more effective in specific business types.



The FIFO Method

The FIFO (or First-in, First-Out) Method is based on the concept that the first inventory purchased is the first to be sold. It is assumed that the remaining inventory is matched to the assets that were most recently purchased or produced. In other words, assigned costs are based on the order in which the product was

used, which helps companies to avoid the obsolescence of their products. This is both the simplest and most common method of inventory valuation. During times of inflation, FIFO will yield a higher value of inventory, lower COGS, and consequently, greater gross profit. Since the newest inventory was purchased at a higher, inflated price, the ending inventory balance would be inflated.

- ❖ FIFO = First-In, First-Out
- ❖ Assumes first items bought are the first items to be sold.
- ❖ In an inflationary market, older/lower costs are assigned to COGS which will result in higher net income for the period.

The LIFO Method

The LIFO (or Last-in, First-out) Method is based on the assumption that the inventory acquired most recently by the firm is the first inventory to be sold to customers. The tendency of goods to be acquired by firms at increasing prices over time means that the latest goods are the most expensive, and reporting their sale instead of the cheaper goods means reporting a lower net profit, and consequently paying fewer taxes. This relationship scales with the extent to which prices for goods increase every year, so it tends to be the method of choice for grocery stores, car dealerships, and convenience stores; all of these industries experience large increases in the price of acquiring goods throughout the year.

One problem associated with switching to LIFO is that unless a firm sells completely out of inventory, goods acquired first may remain on the balance sheet indefinitely. Additionally, lower reported income may look worse for potential investors, since it equates to lower earnings per share. In many cases, LIFO may also undervalue current inventory. These are all reasons why many business owners opt for the FIFO method of accounting. However, for many businesses, the benefits can still outweigh these drawbacks.

- ❖ LIFO = Last In, First Out
- ❖ Assumes latest items bought are first to be sold.
- ❖ Tax advantageous in an inflationary market.
- ❖ LIFO Reserve = the difference between COGS using LIFO vs. FIFO

The Weighted Average Cost Method

The Weighted Average Cost (WAC) method is another way of valuing ending inventory and COGS. It is mostly used when it is difficult to assign a specific cost to a unit of inventory because the inventory items are intertwined. To calculate WAC per unit, divide the total cost of goods available for sale by the number of units available for sale. This assigns a standard average cost to each unit of inventory. While this method is accepted under GAAP, it is not as sophisticated as FIFO or LIFO. Some benefits of WAC include that it is one of the simplest ways to track inventory and is consistent across all stock units. However, this method lacks in situations where inventory prices vary, as it assumes that all units of inventory are identical, when in reality some may be more or less expensive.

- ❖ WAC= Weighted Average Cost

$$\text{WAC per unit} = \frac{\text{Cost of goods available for sale}}{\text{Units available for sale}}$$

- ❖ Takes the weighted average cost of all units available for sale to determine inventory and COGS
- ❖ Always produces results that fall between those from FIFO and LIFO

The Specific Identification Method

The Specific Identification Method is used when a company can individually track each item in its inventory. This method is the most common for smaller businesses as it is easier to track inventory count and specific units. Under this method, the cost of each purchased item is determined and recorded so that the COGS and value of ending inventory are able to be calculated exactly. However, while this method is incredibly accurate, it can be complicated for larger companies to track precisely the cost of each item and the amount received from the sale.

- ❖ Track every item sold and purchased specifically
- ❖ Highly accurate, but time-consuming
- ❖ Requires tracking of every item of inventory, which can be complicated

Applied Example

MONTH	AMOUNT	PRICE PAID PER UNIT	TOTAL COST
January	10 Units	\$100	\$1,000
February	10 Units	\$100	\$1,000
March	10 Units	\$125	\$1,250
April	10 Units	\$125	\$1,250
May	10 Units	\$125	\$1,250
June	10 Units	\$150	\$1,500
July	10 Units	\$150	\$1,500
August	15 Units	\$175	\$2,625
September	15 Units	\$175	\$2,625
October	15 Units	\$200	\$3,000
November	15 Units	\$200	\$3,000
December	<u>15 Units</u>	\$200	<u>\$3,000</u>

Total	145 Units		\$23,000
--------------	------------------	--	-----------------

Assume a total of 110 units were sold for the year.

<u>FIFO Method</u>	<u>LIFO Method</u>																						
<p>Cost calculations start at the top (earliest bought inventory) and expend the costs as units are consumed moving downwards.</p>	<p>Cost calculation assumes that the latest bought inventory at the bottom is sold first. Since the last 110 units average a higher price than the first, total COGS is higher.</p>																						
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="padding: 5px;">20 units x \$100</td><td style="padding: 5px;">= \$2,000</td></tr> <tr><td style="padding: 5px;">30 units x \$125</td><td style="padding: 5px;">= \$3,750</td></tr> <tr><td style="padding: 5px;">20 units x \$150</td><td style="padding: 5px;">= \$3,000</td></tr> <tr><td style="padding: 5px;">30 units x \$175</td><td style="padding: 5px;">= \$5,250</td></tr> <tr><td style="padding: 5px;">10 units x \$200</td><td style="padding: 5px;">= \$2,000</td></tr> <tr><td style="padding: 5px;">TOTAL COGS</td><td style="padding: 5px;">= \$16,000</td></tr> </table>	20 units x \$100	= \$2,000	30 units x \$125	= \$3,750	20 units x \$150	= \$3,000	30 units x \$175	= \$5,250	10 units x \$200	= \$2,000	TOTAL COGS	= \$16,000	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td style="padding: 5px;">45 Units x \$200</td><td style="padding: 5px;">= \$9,000</td></tr> <tr><td style="padding: 5px;">30 Units x \$175</td><td style="padding: 5px;">= \$5,250</td></tr> <tr><td style="padding: 5px;">20 Units x \$150</td><td style="padding: 5px;">= \$3,000</td></tr> <tr><td style="padding: 5px;">15 Units x \$125</td><td style="padding: 5px;">= \$1,875</td></tr> <tr><td style="padding: 5px;">TOTAL COGS</td><td style="padding: 5px;">= \$19,125</td></tr> </table>	45 Units x \$200	= \$9,000	30 Units x \$175	= \$5,250	20 Units x \$150	= \$3,000	15 Units x \$125	= \$1,875	TOTAL COGS	= \$19,125
20 units x \$100	= \$2,000																						
30 units x \$125	= \$3,750																						
20 units x \$150	= \$3,000																						
30 units x \$175	= \$5,250																						
10 units x \$200	= \$2,000																						
TOTAL COGS	= \$16,000																						
45 Units x \$200	= \$9,000																						
30 Units x \$175	= \$5,250																						
20 Units x \$150	= \$3,000																						
15 Units x \$125	= \$1,875																						
TOTAL COGS	= \$19,125																						
<p><u>To calculate ending inventory from COGS:</u> COGS = Beginning Inventory + Purchases - Ending Inventory</p> <p>Beginning Inventory + Purchases = \$23,000 (from original table)</p> <p>\$16,000 = \$23,000 - Ending Inventory → Ending Inventory = \$7,000</p>	<p><u>To calculate ending inventory from COGS:</u> COGS = Beginning Inventory + Purchases - Ending Inventory</p> <p>Beginning Inventory + Purchases = \$23,000 (from original table)</p> <p>\$19,125 = \$23,000 - Ending Inventory → Ending Inventory = \$3,875</p>																						
<p><u>WAC Method</u></p> <p>Divide the total cost of goods available for sale by the total number of units available (<i>values taken from the original table</i>)</p> <p style="text-align: center;"><i>Total number of units available = 145 Units</i></p> <p style="text-align: center;"><i>Total cost of goods available for sale = \$23,000</i></p> <p>Weighted Average Cost of Each Unit = \$23,000 / 145 units = \$158.62</p> <p>COGS = Number of Goods Sold x Weighted Average Cost = 110 Units sold x \$158.62 = \$17,448.28</p>																							

To calculate ending inventory from COGS:

$\text{COGS} = \text{Beginning Inventory} + \text{Purchases} - \text{Ending Inventory}$

$\text{Beginning Inventory} + \text{Purchases} = \$23,000$ (from original table)

$\$17,448.28 = \$23,000 - \text{Ending Inventory} \rightarrow \text{Ending Inventory} = \mathbf{\$5,551.72}$

Conclusion

Here, please conclude your report. This should sum up everything you have discussed.

Works Cited

<https://www.tradegecko.com/inventory-management#:~:text=Inventory%20management%20is%20a%20systematic,cost%20as%20well%20as%20price.>

<https://www.investopedia.com/articles/investing/052815/when-why-should-company-use-lifo.asp#:~:text=When%20prices%20are%20rising%2C%20it,as%20retailers%20or%20automobile%20dealerships.>

<https://www.unleashedsoftware.com/blog/weighted-average-cost-method-inventory-valuation>

<https://www.investopedia.com/ask/answers/09/weighted-average-fifo-lifo-accounting.asp#:~:text=To%20use%20the%20weighted%20average,the%20cost%20of%20goods%20sold.>

<https://corporatefinanceinstitute.com/resources/knowledge/accounting/weighted-average-cost-method/>

<https://www.investopedia.com/articles/02/060502.asp>

<https://corporatefinanceinstitute.com/resources/knowledge/accounting/specific-identification-method/>