

The FIFO Method (First in, First Out) and its application in inventory management



Inventory management is a topic we frequently discuss on this blog. It is a broad subject that encompasses aspects such as assortment management, replenishment and inventory allocation. Today we will focus on warehouse stock management, specifically on the **FIFO method**.

When managing a warehouse, internal rules must be established to ensure efficient handling of stored goods. Various factors influence how products should or must be dispatched, which is why protocols are put in place to help determine which items should leave the facility before others. These rules largely depend on the nature of the products or materials being handled within the warehouse.

For example, managing food products, which have a specific expiration date, is not the same as handling fasteners and screws, which don't expire. These rules help establish a structured process to maintain the proper flow of materials within the warehouse.

What is FIFO (First In, First Out)?

FIFO (First In, First Out) means that the first items to enter are also the first to be dispatched. Under this model, older inventory is used or sold first, while newer stock is reserved for future orders.

Using the FIFO strategy in a warehouse allows a company to minimise the risk of obsolescence and reduce waste. Expired or obsolete products hold no commercial value, which means they cannot generate revenue. FIFO ensures that older items are always moved first, reducing the likelihood of losses due to expiration or obsolescence.

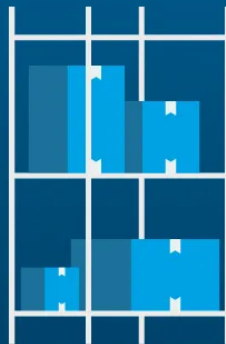
Additionally, warehouse valuation is always based on the most recent restocking prices. In an inflationary environment, this means inventory is valued at a higher cost, which can have both positive and negative implications for the business.

FIFO

The first in, first out stock system



The company arranges its inventory in the order it arrives.



New stock is placed at the back.



The stock that has been in the warehouse the longest is sold first.



FIFO vs LIFO

In contrast to FIFO, we have LIFO (Last In, First Out). In another article we will explain this method in more detail, but in simple terms, LIFO means that the most recently purchased or produced products are also the first to leave the warehouse.

While FIFO aims to reduce obsolescence and waste, LIFO can offer certain financial and accounting benefits. For example, during times of inflation companies using LIFO may end up with lower taxable income since their cost of goods sold is based on the most recent (and typically higher) prices, which in turn reduces reported profits.

However, LIFO is not suitable for all industries. In sectors such as food and pharmaceuticals, where freshness and expiration dates are critical factors, LIFO can lead to significant losses due to expired or deteriorated products remaining in storage for too long.

Each company must assess which inventory management system best suits its business model and the characteristics of its products. FIFO is more commonly used in industries where product freshness and stock rotation are essential, while LIFO may be beneficial in sectors where accounting and tax management play a greater role in decision-making.

Alternative inventory management methods to FIFO

Although FIFO and LIFO are the most widely used methods for determining the order in which products leave storage, there are other alternatives:

FEFO (FIRST EXPIRED, FIRST OUT)

Similar to FIFO but prioritises products with the closest expiration date, regardless of when they entered the warehouse. It's commonly used in the food and **pharmaceutical industries**.

HIFO (HIGHEST IN, FIRST OUT)

Under this method, the most expensive products are used or sold first. It's less common but can be applied in specific accounting strategies.

LOFO (LOWEST IN, FIRST OUT)

The opposite of HIFO, where the lowest-cost inventory is used first. This approach can be useful for maximising profits in certain financial contexts.

BATCH MANAGEMENT

This method organises inventory into specific batches based on manufacturing dates, serial numbers or unique characteristics. It's ideal for industries with strict regulatory requirements, such as pharmaceuticals or food retail environments where retailers require a certain remaining shelf life.

FIFO in accounting

Although this is not the main focus of our discussion, it's important to note that FIFO also plays a role in a company's accounting when valuing inventory. FIFO values the sold goods at the price of the oldest units. This method evaluates both incoming stock and existing inventory based on their acquisition price, in accordance with the chronological order of arrival in the warehouse. However, when products are sold, they are valued at the price of the first batches that entered. As a result, the remaining inventory after a sale is valued at the most recent prices.

The FIFO method is commonly used when valuing inventories consisting of expired or perishable products. In other words, the system follows the necessary order to ensure that the items with the closest expiration date or highest risk of becoming obsolete are the first to be sold. It's also a widely adopted approach for ensuring **constant inventory turnover** as the longest-stored unit will be the next to be sold.

Example of FIFO in accounting

Let's take a simple example to see how FIFO is applied in accounting:

Suppose a company purchases 100 units of a product in two consecutive batches:

- 50 units at €10 each.
- 50 units at €12 each.

If the company sells 60 units under FIFO, the cost of sales would be calculated as follows:

- 50 units at €10 = €500.
- 10 units at €12 = €120.
- **Total cost of sales = €620.**

➤ **Ending inventory = 40 units at €12 = €480.**

Is it possible for FIFO to result in a negative outcome?

Yes, it's possible for the application of the FIFO method to generate negative results under certain circumstances. This primarily occurs when the replacement cost of products is higher than the original acquisition cost, which may lead to a lower profit margin or even accounting losses in some cases.

Some situations where FIFO could result in a negative outcome include:

- **High inflation:** If the prices of products have increased significantly since their purchase, the recorded cost of sales will be lower than the current replacement price, potentially reducing profitability.
- **A sharp decline in demand:** If a product has lost value in the market and the company still has old inventory, it may be sold at a price lower than the original cost.
- **Inventory management errors:** Poor FIFO management, such as incorrect records or failures in stock rotation, can lead to unforeseen losses.

Differences between FIFO and PMP

The FIFO and PMP (Weighted Average Cost) methods are two different approaches to inventory management and valuation. While FIFO ensures that older products are sold first, PMP calculates an **average cost for inventory** and sales.

Some key differences between the two methods:

- **Valuation approach:** FIFO values inventory based on the most recent costs, whereas PMP takes an average of all acquisition costs.
- **Impact on accounting:** FIFO tends to show lower cost of sales during periods of inflation, increasing accounting profits. PMP smooths out price fluctuations by calculating an average cost.
- **Recommended usage:** FIFO is preferred in industries where inventory turnover is key, such as food or pharmaceuticals. PMP is more suitable for sectors with cost fluctuations or where the age of stock is not a relevant factor.

Intralogistics solutions for implementing FIFO

Implementing the FIFO method in a warehouse may require specific **intralogistics solutions** to facilitate the tracking of inventory flow. Some key strategies and technologies include:

- **Dynamic shelving systems:** Roller or gravity shelves allow older products to automatically move forward, making them easier to access and dispatch.
- **Warehouse Management Software (WMS):** These tools automate inventory control, track product entry dates, optimise their location within the warehouse, and suggest the appropriate batch for dispatch.
- **Barcode labelling and scanning:** This system allows easy identification of older products, ensuring they are prioritised for dispatch.
- **Warehouse zoning:** Dividing the space into specific areas according to the age of the products helps maintain a logical and efficient order for goods dispatch.
- **Automation with robots:** Intralogistics robots can be programmed to pick up and transport products following the FIFO logic, reducing the margin for human error.

These solutions not only facilitate the application of FIFO but also increase the overall efficiency of the warehouse and minimise the risk of errors.

Want to integrate FIFO with smarter inventory strategies? Explore our **assortment management software** to align your stock flow with product demand and shelf life.

Factors influencing the application of the FIFO method

The implementation of the FIFO (First In, First Out) method requires prior analysis as it depends on a number of factors that can affect its effectiveness and operational viability. The most relevant factors include:

NATURE OF THE PRODUCTS

In sectors such as food, pharmaceuticals, or cosmetics, FIFO is essential to ensure freshness and prevent losses due to expiry. Products with an expiration date require strict control, while in other industries such as manufacturing, the application of FIFO can be more flexible.

WAREHOUSE DESIGN AND CAPACITY

The **layout and infrastructure of the warehouse** play a key role in the correct implementation of FIFO. Warehouses with narrow aisles, high storage or poorly designed racking systems can hinder efficient product rotation.

TECHNOLOGY AND AUTOMATION

The use of Warehouse Management Systems (WMS), RFID labelling, barcodes and IoT sensors enables accurate tracking of inventory flow. In high-volume storage, automation reduces human error and optimises operations.

INVENTORY VOLUME AND TURNOVER

In companies with high stock volumes, managing FIFO manually is unfeasible. The larger the quantity of products and their replenishment speed, the more crucial it is to have automated and well-structured processes to ensure proper rotation.

REPLENISHMENT FREQUENCY AND MARKET DEMAND

The speed at which products are received and sold directly influences the need to apply FIFO. Companies with high stock turnover must ensure that older items are sold first to avoid unnecessary accumulation or the risk of obsolescence.

STAFF TRAINING

No FIFO strategy will be effective without a properly trained team. Operators must understand the importance of the method and apply the correct procedures when handling and storing products to avoid deviations in inventory rotation.

Conclusions

The success of implementing the FIFO method depends on the balanced management of these factors. A combination of suitable infrastructure, intelligent automation and ongoing training can make the difference between an efficient system and one prone to errors and losses. Effectively implementing FIFO not only optimises inventory management but also improves profitability and customer satisfaction.



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