CTL.SC2x -Supply Chain Design

Supply Chain Finance

Inventory Valuation Methods: LIFO and FIFO

Inventory Valuation

- In order to keep track of inventory, we need to measure it
  - Money Measurement Concept: Money is the common measure
- There are a number of generally accepted methods based on historical costs for identifying inventory cost
  - Specific identification, Last invoice price
  - Simple average, Weighted average, Moving average
  - Last-in, First-out (LIFO)
  - First-in, First-out (FIFO)
- Physical product flows do not exactly mirror financial flows
  - Last-in, First-Out may be used for financial reporting, but the 'first' (or next) item out will not be the one most recently acquired

Ref.: Hawkins, David, Corporate Financial Reporting and Analysis: Text and Cases 3rd ed., Irwin, 1986, p 649

Last-in, First-out (LIFO) Inventory Valuation

- An asset-management and valuation method used in the US
- LIFO uses the **newest** costs in the inventory account to be transferred to COGS when merchandise is sold
  - "assets produced or acquired last are the ones that are used, sold or disposed of first" when recording the transaction (e.g. sales transaction)
  - That means that the remaining inventory on hand will be valued at the earlier acquisition cost
- Inventory valued using LIFO can be undervalued:
  - "COGS is measured using the cost of items purchased or manufactured. If older costs are retained in the inventory account because the inventory is never depleted, and if prices change substantially in the accounting periods during which these old costs are retained, the LIFO inventory balance will likely bear little resemblance to the current value of the same amount of inventory recently purchased."*

Ref.: Accounting for Current Assets, Harvard Business School Publishing, Product # 193-048

Ref.: Investopedia, http://www.investopedia.com/terms/l/lifo.asp and http://www.investopedia.com/terms/f/fifo.asp

First-in, First out (FIFO) Inventory Valuation

- An asset-management and valuation method
- FIFO uses the **oldest** costs in the inventory account to be transferred to COGS when merchandise is sold
  - "an asset-management and valuation method in which the assets produced or acquired first are sold, used or disposed of first"
  - This means "that the costs retained in the inventory account will always be those most recently incurred for the purchase or manufacture of inventory" meaning that the remaining inventory on account are those most recently purchased or produced
- Inventory valued using FIFO will likely be valued at market replacement costs
  - "FIFO…produces an inventory account balance that usually comes closest to approximating the replacement cost of the inventory"*

Ref.: Investopedia, http://www.investopedia.com/terms/l/lifo.asp and http://www.investopedia.com/terms/f/fifo.asp; Accounting for Current Assets, Harvard Business School Publishing, Product # 193-048

LIFO & FIFO in Use

- Financial reports will be different for each method
  - Using LIFO reports a higher cost than FIFO for materials*
    - The inventory that is matched with the sale using LIFO is that which was most recently purchased.
    - This results in a lower reported net income, which then results in a lower current tax obligation.
  - Using FIFO reports a lower cost than LIFO for materials*
    - The inventory that is matched with the sale using FIFO is that which was purchased earliest and presumably at lower costs.
    - This results in a higher reported net income, which then results in a higher current tax obligation.

*Assuming an increasing cost to acquire materials

Example: LIFO compared with FIFO

- Company buys raw materials as follows:
  - January 15 20 Units at $5 ea
  - February 1 20 Units at $10 ea
  - February 15 20 Units at $15 ea
- Company sells 30 units at $20 ea on February 29

Income Statement (FIFO method)	
Revenue (30 @$20)	$600
Cost (20@$5 + 10@$10)	$200
Net Income	$400
Tax @ 20%	$80
Value of Remaining Inventory	
(10@$10 + 20@$15) =	$400

Income Statement (LIFO method)	
Revenue (30 @$20)	$600
Cost (20@$15 + 10@$10)	$400
Net Income	$200
Tax @ 20%	$40
Value of Remaining Inventory	
(10@$10 + 20@$5) =	$200

- With FIFO we see higher reported net income…but that means paying more tax in the current period

Key Points

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- Inventory valuation can be conducted using different methods – two of the more popular methods are LIFO and FIFO.
- LIFO uses the most recent cost of inventory to assign to sales which results in lower stated profits (assuming material costs increase over time). As a result, the remaining inventory can be undervalued.
- FIFO uses the oldest cost of inventory which results in potentially higher profits but near term tax obligations. As a result, the remaining inventory can be valued at current replacement cost.
- It is important to understand the inventory valuation method in order to get an initial assessment of the inventory quality.

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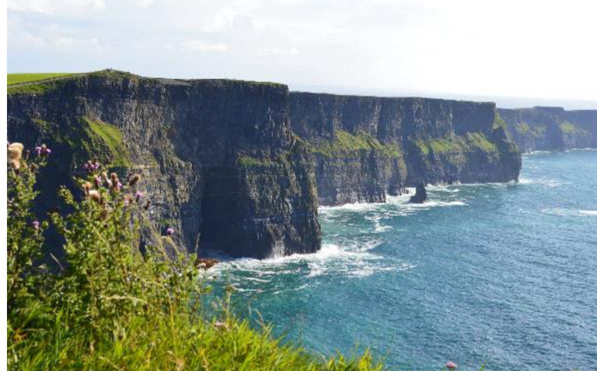
Questions, Comments, Suggestions? Use the Discussion…..



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Sources, Image & Reference Information

- **References**
- Hawkins, David, Corporate Financial Reporting and Analysis: Text and Cases 3rd ed., Irwin, 1986
- Investopedia, http://www.investopedia.com/terms/l/lifo.asp and http://www.investopedia.com/terms/f/fifo.asp
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