Chapter 7

Reporting and Interpreting Cost of Goods Sold and Inventory

ANSWERS TO QUESTIONS

1. Inventory often is one of the largest amounts listed under assets on the balance sheet which means that it represents a significant amount of the resources available to the business. The inventory may be excessive in amount, which is a needless waste of resources; alternatively it may be too low, which may result in lost sales. Therefore, for internal users inventory control is very important. On the income statement, inventory exerts a direct impact on the amount of income. Therefore, statement users are interested particularly in the amount of this effect and the way in which inventory is measured. Because of its impact on both the balance sheet and the income statement, it is of particular interest to all statement users.

2. Fundamentally, inventory should include those items, and only those items, legally owned by the business. That is, inventory should include all goods that the company owns, regardless of their particular location at the time.

3. The cost principle governs the measurement of the ending inventory amount. The ending inventory is determined in units and the cost of each unit is applied to that number. Under the cost principle, the unit cost is the sum of all costs incurred in obtaining one unit of the inventory item in its present state.

4. Goods available for sale is the sum of the beginning inventory and the amount of goods purchased during the period. Cost of goods sold is the amount of goods available for sale less the ending inventory.

5. Beginning inventory is the stock of goods on hand (in inventory) at the start of the accounting period. Ending inventory is the stock of goods on hand (in inventory) at the end of the accounting period. The ending inventory of one period automatically becomes the beginning inventory of the next period.

6. (a) **Average cost**–This inventory costing method in a periodic inventory system is based on a weighted-average cost for the entire period. At the **end** of the accounting period the average cost is computed by dividing the goods available for sale **in units** into the cost of goods available for sale **in dollars**. The computed unit cost then is used to determine the cost of goods sold for the period by multiplying the units sold by this average unit cost. Similarly, the ending inventory for the period is determined by multiplying this average unit cost by the number of units on hand.

(b) **FIFO**–This inventory costing method views the first units purchased as the first units sold. Under this method cost of goods sold is costed at the oldest unit costs, and the ending inventory is costed at the newest unit costs.

(c) **LIFO**–This inventory costing method assumes that the last units purchased are the first units sold. Under this method cost of goods sold is costed at the newest unit costs and the ending inventory is costed at the oldest unit costs.

(d) **Specific identification**–This inventory costing method requires that each item in the beginning inventory and each item purchased during the period be identified specifically so that its unit cost can be determined by identifying the specific item sold. This method usually requires that each item be marked, often with a code that indicates its cost. When it is sold, that unit cost is the cost of goods sold amount. It often is characterized as a pick-and-choose method. When the ending inventory is taken, the specific items on hand, valued at the cost indicated on each of them, is the ending inventory amount.

7. The specific identification method of inventory costing is subject to manipulation. Manipulation is possible because one can, at the time of each sale, select (pick and choose) from the shelf the item that has the highest or the lowest (or some other) unit cost with no particular rationale for the choice. The rationale may be that it is desired to influence, by arbitrary choice, both the amount of income and the amount of ending inventory to be reported on the financial statements. To illustrate, assume item A is stocked and three are on the shelf. One cost $100; the second one cost $115; and the third cost $125. Now assume that one unit is sold for $200. If it is assumed arbitrarily that the first unit is sold, the gross profit will be $100; if the second unit is selected, the gross profit will be $85; or alternatively, if the third unit is selected, the gross profit will be $75. Thus, the amount of gross profit (and income) will vary significantly depending upon which one of the three is selected arbitrarily from the shelf for this particular sale. This assumes that all three items are identical in every respect except for their unit costs. Of course, the selection of a different unit cost, in this case, also will influence the ending inventory for the two remaining items.

8. **LIFO and FIFO** have opposite effects on the inventory amount reported under assets on the balance sheet. The ending inventory is based upon either the oldest unit cost or the newest unit cost, depending upon which method is used. Under **FIFO**, the ending inventory is costed at the newest unit costs, and under **LIFO**, the ending inventory is costed at the oldest unit costs. Therefore, when prices are rising, the ending inventory reported on the balance sheet will be higher under **FIFO** than under **LIFO**. Conversely, when prices are falling the ending inventory on the balance sheet will be higher under **LIFO** than under **FIFO**.

9. **LIFO** versus **FIFO** will affect the income statement in two ways: (1) the amount of cost of goods sold and (2) income. When the prices are rising, **FIFO** will give a lower cost of goods sold amount and hence a higher income amount than will **LIFO**. In contrast, when prices are falling, **FIFO** will give a higher cost of goods sold amount and, as a result, a lower income amount.

10. When prices are rising, **LIFO** causes a lower taxable income than does **FIFO**. Therefore, when prices are rising, income tax is less under **LIFO** than **FIFO**. A lower tax bill saves cash (reduces cash outflow for income tax). The total amount of cash saved is the difference between **LIFO** and **FIFO** inventory amounts multiplied by the income tax rate.

11. LCM is applied when market (defined as current replacement cost) is lower than the cost of units on hand. The ending inventory is valued at market (lower), which (a) reduces net income and (b) reduces the inventory amount reported on the balance sheet. The effect of applying LCM is to include the **holding loss** on the income statement (as a part of CGS) in the period in which the replacement cost drops below cost rather than in the period of actual sale.

12. When a perpetual inventory system is used, the unit cost must be known for each item sold at the date of each sale because at that time two things happen: (a) the units sold and their costs are removed from the perpetual inventory record and the new inventory balance is determined; (b) the cost of goods sold is determined from the perpetual inventory record and an entry in the accounts is made as a debit to Cost of Goods Sold and a credit to Inventory. In contrast, when a periodic inventory system is used the unit cost need not be known at the date of each sale. In fact, the periodic system is designed so that cost of goods sold for each sale is not known at the time of sale. At the end of the period, under the periodic inventory system, cost of goods sold is determined by adding the beginning inventory to the total goods purchased for the period and subtracting from that total the ending inventory amount. The ending inventory amount is determined by means of a physical inventory count of the goods remaining on hand and with the units valued on a unit cost basis in accordance with the cost principle (by applying an appropriate inventory costing method).

ANSWERS TO MULTIPLE CHOICE

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 1. c) | 1. d) | 1. a) | 1. a) | 1. c) |
| 1. c) | 1. a) | 1. c) | 1. c) | 1. a) |

Authors' Recommended Solution Time

**(Time in minutes)**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *Mini-exercises* | | *Exercises* | | *Problems* | | *Alternate Problems* | | *Cases and Projects* | |
| *No.* | *Time* | *No.* | *Time* | *No.* | *Time* | *No.* | *Time* | *No.* | *Time* |
| 1 | 5 | 1 | 15 | 1 | 30 | 1 | 30 | 1 | 20 |
| 2 | 5 | 2 | 20 | 2 | 30 | 2 | 40 | 2 | 20 |
| 3 | 5 | 3 | 20 | 3 | 40 | 3 | 35 | 3 | 20 |
| 4 | 10 | 4 | 10 | 4 | 40 | 4 | 40 | 4 | 20 |
| 5 | 5 | 5 | 15 | 5 | 45 |  |  | 5 | 40 |
| 6 | 5 | 6 | 15 | 6 | 50 |  |  | 6 | 20 |
| 7 | 5 | 7 | 30 | 7 | 40 |  |  | 7 | 30 |
| 8 | 5 | 8 | 30 | 8 | 40 |  |  | 8 | \* |
| 9 | 10 | 9 | 30 | 9 | 35 |  |  |  |  |
|  |  | 10 | 30 | 10 | 20 |  |  |  |  |
|  |  | 11 | 15 |  |  |  |  |  |  |
|  |  | 12 | 20 |  |  |  |  | *Continuing Case* | |
|  |  | 13 | 15 |  |  |  |  | 1 | 30 |
|  |  | 14 | 20 |  |  |  |  |  |  |
|  |  | 15 | 20 |  |  |  |  |  |  |
|  |  | 16 | 20 |  |  |  |  |  |  |
|  |  | 17 | 20 |  |  |  |  |  |  |
|  |  | 18 | 20 |  |  |  |  |  |  |
|  |  | 19 | 15 |  |  |  |  |  |  |
|  |  | 20 | 20 |  |  |  |  |  |  |
|  |  | 21 | 25 |  |  |  |  |  |  |
|  |  | 22 | 25 |  |  |  |  |  |  |

\* Due to the nature of these cases and projects, it is very difficult to estimate the amount of time students will need to complete the assignment. As with any open-ended project, it is possible for students to devote a large amount of time to these assignments. While students often benefit from the extra effort, we find that some become frustrated by the perceived difficulty of the task. You can reduce student frustration and anxiety by making your expectations clear. For example, when our goal is to sharpen research skills, we devote class time to discussing research strategies. When we want the students to focus on a real accounting issue, we offer suggestions about possible companies or industries.

MINI-EXERCISES

**M7–1.**

***Type of Business***

***Type of Inventory Merchandising Manufacturing***

Work in process X

Finished goods X

Merchandise X

Raw materials X

**M7–2.**

To record the purchase of 90 new shirts in accordance with the cost principle (perpetual inventory system):

Inventory (­+A) 2,150

Cash (−A) 2,150

Cost: $1,800 + $185 + $165 = $2,150.

The $108 interest expense is not a proper cost of the merchandise; it is recorded as prepaid interest expense and later as interest expense.

**M7–3.**

|  |  |  |
| --- | --- | --- |
|  | **(1) Part of inventory** | **(2) Expense as incurred** |
| a. Wages of factory workers | X |  |
| b. Costs of raw materials purchased | X |  |
| c. Sales salaries |  | X |
| d. Heat, light, and power for the factory building | X |  |
| e. Heat, light, and power for the headquarters office building |  | X |

**M7–4.**

*Computation*: Simply rearrange the basic inventory model (BI + P – EI = CGS):

Cost of goods sold $11,042 million

+ Ending inventory 2,916 million

– Beginning inventory (3,213) million Purchases $10,745 million

**M7–5.**

|  |  |  |
| --- | --- | --- |
| (a) | Declining costs |  |
|  | Highest net income | LIFO |
|  | Highest inventory | LIFO |
| (b) | Rising costs |  |
|  | Highest net income | FIFO |
|  | Highest inventory | FIFO |

**M7–6.**

LIFO is often selected when costs are rising because it reduces the company’s tax liability which increases cash and benefits shareholders. However, it also reduces reported net income.

**M7–7.**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Quantity** | **Cost per  Item** | **Replacement Cost per Item** | **Lower of Cost or Market** | **Reported on Balance Sheet** |
| Item A | 70 | $ 110 | $100 | $100 | 70 x $100 = $7,000 |
| Item B | 30 | 60 | 85 | 60 | 30 x $60 = $1,800 |
| Total |  |  |  |  | $8,800 |

**M7–8.**

|  |  |  |
| --- | --- | --- |
| + | (*a*) | Parts inventory delivered daily by suppliers instead of weekly. |
| NE | (*b*) | Extend payments for inventory purchases from 15 days to 30 days. |
| + | (*c*) | Shorten production process from 10 days to 8 days. |

**M7–9.**

Understatement of the 2014 ending inventory by $50,000 caused 2014 pretax income to be understated and 2015 pretax income to be overstated by the same amount. Overstatement of the 2014 ending inventory would have the opposite effect; that is, 2014 pretax income would be overstated by $50,000 and 2015 pretax income understated by $50,000. Total pretax income for the two years combined would be correct.

EXERCISES

**E7–1**

|  |  |  |  |
| --- | --- | --- | --- |
| **Item** | | **Amount** | **Explanation** |
| Ending inventory (physical count on December 31, 2014) | | $34,500 | Per physical inventory. |
| a. | Goods purchased and in transit | + 700 | Goods purchased and in transit, F.O.B. shipping point, are owned by the purchaser. |
| b. | Samples out on trial to customer | + 1,800 | Samples held by a customer on trial are still owned by the vendor; no sale or transfer of ownership has occurred. |
| c. | Goods in transit to customer |  | Goods shipped to customers, F.O.B. shipping point, are owned by the customer because ownership passed when they were delivered to the transportation company. The inventory correctly excluded these items. |
| d. | Goods sold and in transit | + 1,500 | Goods sold and in transit, F.O.B. destination, are owned by the seller until they reach destination. |
| Correct inventory, December 31, 2014 | | $38,500 |  |

**E7–2.**

(Italics for missing amounts only.)

**Case A Case B Case C**

Net sales revenue $7,500 $***4,800*** $5,000

Beginning inventory $11,200 $ 7,000 $ 4,000

Purchases 4,500  ***8,050*** 9,500

Goods available for sale  ***15,700***  15,050 13,500

Ending inventory 9,000 11,050  ***9,300***

Cost of goods sold  ***6,700***  ***4,000*** 4,200

Gross profit  ***800*** 800  ***800***

Expenses 300  ***1,000***  700

Pretax income $ 500 $ (200) $ 100

**E7–3.**

(Italics and bold for missing amounts only.)

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Case*** | **Sales Revenue** | **Beg. Inven-tory** | **Pur-chases** | **Total Avail-able** | **Ending Inventory** | **Cost of Goods Sold** | **Gross Profit** | **Ex-penses** | **Pretax Income or (Loss)** |
| A | $ 650 | $100 | $700 | ***$800*** | $500 | ***$300*** | ***$350*** | $200 | ***$150*** |
| B | 1,100 | 200 | 900 | ***1,100*** | ***300*** | ***800*** | ***300*** | 150 | 150 |
| C | ***600*** | 150 | ***350*** | ***500*** | 300 | 200 | 400 | 100 | ***300*** |
| D | 800 | ***150*** | 550 | ***700*** | 300 | ***400*** | ***400*** | 200 | 200 |
| E | 1,000 | ***200*** | 900 | 1,100 | ***600*** | ***500*** | 500 | ***550*** | (50) |

**E7–4.**

*Computations:*

Simply rearrange the cost of goods sold equation

BI + P – EI = CGS

P = CGS – BI + EI

Cost of goods sold $1,639,188,000

– Beginning inventory (385,857,000)

+ Ending inventory 569,818,000

Purchases $1,823,149,000

**E7-5**

**Average**

**Units FIFO LIFO Cost**

Cost of goods sold:

Beginning inventory ($5) 2,000 $10,000 $10,000 $10,000

Purchases (March 21) ($6) 5,000 30,000 30,000 30,000

(August 1) ($8) 3,000 24,000 24,000 24,000

Goods available for sale 10,000 64,000 64,000 64,000

Ending inventory\* 4,000 30,000 22,000 25,600

Cost of goods sold\*\* 6,000 $34,000 $42,000 $38,400

\*Ending inventory computations:

FIFO: (3,000 units @ $8) + (1,000 units @ $6) = $30,000.

LIFO: (2,000 units @ $5) + (2,000 units @ $6) = $22,000.

Average: [(2,000 units @ $5) + (5,000 units @ $6) + (3,000 units @ $8)] =

$64,000 ÷ 10,000 units = $6.40 per unit.

4,000 units @ $6.40 = $25,600.

\*\*Cost of goods sold computations:

FIFO: (2,000 units @ $5) + (4,000 units @ $6) = $34,000.

LIFO: (3,000 units @ $8) + (3,000 units @ $6) = $42,000.

Average: [(2,000 units @ $5) + (5,000 units @ $6) + (3,000 units @ $8)] =

$64,000 ÷ 10,000 units = $6.40 per unit.

6,000 units @ $6.40 = $38,400.

**E7–6**

**Average**

**Units FIFO LIFO Cost**

Cost of goods sold:

Beginning inventory ($5) 2,000 $10,000 $10,000 $10,000

Purchases (March 21) ($4) 6,000 24,000 24,000 24,000

(August 1) ($2) 4,000 8,000 8,000 8,000

Goods available for sale 12,000 42,000 42,000 42,000

Ending inventory\* 3,000 6,000 14,000 10,500

Cost of goods sold 9,000 $36,000 $28,000 $31,500

\*Ending inventory computations:

FIFO: (3,000 units @ $2) = $6,000.

LIFO: (2,000 units @ $5) + (1,000 units @ $4) = $14,000.

Average: [(2,000 units @ $5) + (6,000 units @ $4) + (4,000 units @ $2)] =

$42,000 ÷ 12,000 units = $3.50 per unit.

3,000 units @ $3.50 = $10,500.

\*\*Cost of goods sold computations:

FIFO: (2,000 units @ $5) + (6,000 units @ $4) + (1,000 units @ $2) = $36,000.

LIFO: (4,000 units @ $2) + (5,000 units @ $4) = $28,000.

Average: [(2,000 units @ $5) + (6,000 units @ $4) + (4,000 units @ $2)] =

$42,000 ÷ 12,000 units = $3.50 per unit.

9,000 units @ $3.50 = $31,500.

**E7–7.**

Req. 1

**BROADHEAD COMPANY**

**Income Statement**

**For the Year Ended December 31, 2015**

***Case A Case B***

***FIFO LIFO***

Sales revenue1 $500,000 $500,000

Cost of goods sold:

Beginning inventory $ 27,000 $ 27,000

Purchases 195,000 195,000

Goods available for sale2 222,000 222,000

Ending inventory3 125,000 87,000

Cost of goods sold4 97,000 135,000

Gross profit 403,000 365,000

Expenses 195,000 195,000

Pretax income $208,000 $170,000

Computations:

(1) Sales: (10,000 units @ $50) = $500,000

(2) Goods available for sale (for both cases):

***Units Unit Cost Total Cost***

Beginning inventory 3,000 $9 $ 27,000

Purchase, April 11, 2015 9,000 10 90,000

Purchase, June 1, 2015 7,000 15 105,000

Goods available for sale 19,000 $222,000

(3) Ending inventory (19,000 available – 10,000 units sold = 9,000 units):

Case A ***FIFO:***

(7,000 units @ $15 = $105,000) +

(2,000 units @ $10 = $20,000) = $125,000.

Case B ***LIFO:***

(3,000 units @ $9 = $27,000)+

(6,000 units @ $10 = $60,000) = $87,000.

**E7–7. *(continued)***

Req. 1 (continued)

(4) Cost of goods sold (10,000 units sold):

Case A ***FIFO:***

(3,000 units @ $9 = $27,000) +

(7,000 units @ $10 = $70,000) = $97,000

Case B ***LIFO:***

(7,000 units @ $15 = $105,000) +

(3,000 units @ $10 = $30,000) = $135,000

Req. 2

***Comparison of Amounts***

***Case A Case B***

***FIFO LIFO***

Pretax Income $208,000 $170,000

Difference $38,000

Ending Inventory 125,000 87,000

Difference 38,000

The above tabulation demonstrates that the pretax income difference between the two cases is exactly the same as the inventory difference. Differences in inventory have a dollar-for-dollar effect on pretax income.

Req. 3

LIFO may be preferred for income tax purposes because it reports less taxable income (when prices are rising) and hence (a) reduces income tax and (b) as a result reduces cash outflows for the period.

**E7–8.**

Req. 1

**BECK INC.**

**Income Statement**

**For the Year Ended December 31, 2015**

***Case A Case B***

***FIFO LIFO***

Sales revenue1 $704,000 $704,000

Cost of goods sold:

Beginning inventory $ 35,000 $ 35,000

CHANGED

Purchases 281,000 281,000

Goods available for sale2 316,000 316,000

Ending inventory3 128,000 80,000

Cost of goods sold4 188,000 236,000

Gross profit 516,000 468,000

Expenses 500,000 500,000

Pretax income $16,000 $(32,000)

Computations:

(1) Sales: (8,000 units @ $28) + (16,000 units @ $30) = $704,000

(2) Goods available for sale (for both cases):

***Units Unit Cost Total Cost***

Beginning inventory 7,000 $5 $ 35,000

Purchase, March 5, 2015 19,000 9 171,000

Purchase, September 19, 2015 10,000 11 110,000

Goods available for sale 36,000 $316,000

(3) Ending inventory (36,000 available – 24,000 units sold = 12,000 units):

Case A ***FIFO:***

(10,000 units @ $11 = $110,000) +

(2,000 units @ $9 = $18,000) = $128,000.

Case B ***LIFO:***

(7,000 units @ $5 = $35,000)+

(5,000 units @ $9 = $45,000) = $80,000.

**E7–8. *(continued)***

Req. 1 (continued)

(4) Cost of goods sold (24,000 units sold):

Case A ***FIFO:***

(7,000 units @ $5 = $35,000) +

(17,000 units @ $9 = $153,000) = $188,000

Case B ***LIFO:***

(10,000 units @ $11 = $110,000) +

(14,000 units @ $9 = $126,000) = $236,000

Req. 2

***Comparison of Amounts***

***Case A Case B***

***FIFO LIFO***

Pretax Income $16,000 $(32,000)

Difference $48,000

Ending Inventory 128,000 80,000

Difference 48,000

The above tabulation demonstrates that the pretax income difference between the two cases is exactly the same as the inventory difference. Differences in inventory have a dollar-for-dollar effect on pretax income.

Req. 3

LIFO may be preferred for income tax purposes because it reports less taxable income (when prices are rising) and hence (a) reduces income tax and (b) as a result reduces cash outflows for the period.

**E7–9.**

Req. 1

**Average**

**Units FIFO LIFO Cost**

**Cost of goods sold**:

Beginning inventory 2,000 $ 76,000 $ 76,000 $ 76,000

Purchases 8,000 320,000 320,000 320,000

Goods available for sale 10,000 396,000 396,000 396,000

Ending inventory\* 1,800 72,000 68,400 71,280

Cost of goods sold\*\* 8,200 $324,000 $327,600 $324,720

**Average**

**Income statement FIFO LIFO Cost**

Sales revenue $615,000 $615,000 $615,000

Cost of goods sold 324,000 327,600 324,720

Gross profit 291,000 287,400 290,280

Expenses 194,500 194,500 194,500

Pretax income 96,500 92,900 95,780

Income tax expense (30%) 28,950 27,870 28,734

Net income $ 67,550 $ 65,030 $ 67,046

\*Ending inventory computations:

FIFO: 1,800 units @ $40 = $72,000.

LIFO: 1,800 units @ $38 = $68,400.

Average: [(2,000 units @ $38) + (8,000 units @ $40)] ÷ 10,000 units =

$396,000 ÷ 10,000 units = $39.60 per unit.

$39.60 x 1,800 units = $71,280.

\*\*Cost of goods sold computations:

FIFO: (2,000 units @ $38) + (6,200 units @ $40) = $324,000.

LIFO: (8,000 units @ $40) + (200 units @ $38) = $327,600.

Average: [(8,000 units @ $38) + (8,000 units @ $40)] =

$396,000 ÷ 10,000 units = $39.60 per unit.

8,200 units @ $39.60 = $324,720.

Req. 2

FIFO produces a more favorable (higher) net income because when prices are rising it gives a lower cost of goods sold amount. FIFO allocates the old (lower) unit costs to cost of goods sold.

LIFO produces a more favorable cash flow than FIFO because, when prices are rising, it produces a higher cost of goods sold amount and lower taxable income and, therefore, lower income tax expense for the period. Cash outflow is less under LIFO by the amount of income tax reduction. LIFO causes these comparative effects because it allocates the new (higher) unit costs to cost of goods sold.

**E7–9. (continued)**

Req. 3

When prices are falling, the opposite effect occurs–LIFO produces higher net income and less favorable cash flow than does FIFO.

**E7–10.**

Req. 1

***Average***

***FIFO LIFO Cost***

Cost of goods sold:

Beginning inventory (400 units @ $28) $11,200 $11,200 $11,200

Purchases (475 units @ $35) 16,625 16,625 16,625

Goods available for sale 27,825 27,825 27,825

Ending inventory (525 units)\* 18,025 15,575 16,695

Cost of goods sold (350 units)\*\* $ 9,800 $12,250 $ 11,130

\*Computation of ending inventory:

FIFO: (475 units x $35) + (50 units x $28) = $18,025

LIFO: (400 units x $28) + (125 units x $35) = $15,575

Average: [(400 units @ $28) + (475 units @ $35)] ÷ 875 units =

$27,825 ÷ 875 units = $31.80 per unit.

$31.80 x 525 units = $16,695.

\*\*Cost of goods sold computations:

FIFO: (350 units @ $28) = $9,800.

LIFO: (350 units @ $35) = $12,250.

Average: [(400 units @ $28) + (475 units @ $35)] ÷ 875 units =

$27,825 ÷ 875 units = $31.80 per unit.

$31.80 x 350 units = $11,130.

Req. 2

***Average***

***FIFO LIFO Cost***

Sales revenue ($50 x 350) $17,500 $17,500 $17,500

Cost of goods sold 9,800 12,250 11,130

Gross profit 7,700 5,250 6,370

Expenses 1,700 1,700 1,700

Pretax income $ 6,000 $ 3,550 $ 4,670

**E7–10.  *(continued)***

Req. 3

Ranking in order of favorable cash flow: The higher rankings are given to the methods that produce the **lower** income tax expense because the lower the income tax expense the **higher** the cash savings.

(1) LIFO–produces the lowest pretax income, hence the lowest amount of cash to be paid for income tax.

(2) Weighted average–produces next lower pretax income.

(3) FIFO–produces the highest pretax income and as a result the highest income tax. This result causes the lowest cash savings on income tax.

The above comparative effects occurred because prices were rising. If prices were falling the three methods would have produced the opposite ranking.

**E7–11.**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Item** | **Quantity** | **Total Cost** | | | | **Total Market** | | | | **LCM Valuation** |
| A | 50 | x | $15 | = | $ 750 | x | $12 | = | $600 | $ 600 |
| B | 80 | x | 30 | = | 2,400 | x | 40 | = | 3,200 | 2,400 |
| C | 10 | x | 48 | = | 480 | x | 52 | = | 520 | 480 |
| D | 70 | x | 25 | = | 1,750 | x | 30 | = | 2,100 | 1,750 |
| E | 350 | x | 10 | = | 3,500 | x | 5 | = | 1,750 | 1,750 |
|  | Total |  |  |  | $8,880 |  |  |  | $8,170 | $6,980 |

Inventory valuation that should be used (LCM) $6,980

**E7–12.**

Req. 1

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Item** | **Quantity** | **Total Cost** | | | | **Total Market** | | | | **LCM Valuation** |
| A | 30 | x | $20 | = | $ 600 | x | $15 | = | $ 450 | $ 450 |
| B | 55 | x | 40 | = | 2,200 | x | 44 | = | 2,420 | 2,200 |
| C | 35 | x | 52 | = | 1,820 | x | 55 | = | 1,925 | 1,820 |
| D | 15 | x | 27 | = | 405 | x | 32 | = | 480 | 405 |
|  | Total |  |  |  | $5,025 |  |  |  | $5,275 | $4,875 |

Inventory valuation that should be used (LCM) $4,875

Req. 2

The write-down to lower of cost or market will increase cost of goods sold expense by the amount of the write-down, $150:

Total Cost − LCM Valuation = Write-down

$5,025 − $4,875 = $150 Write-down

**E7–13.**

Req. 1

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Inventory turnover | = | Cost of Goods Sold | = | $48,260 | = | 35.68 |
|  |  | Average Inventory |  | ($1,301+$1,404)/2 |  |  |

Average days to sell inventory = 365 / inventory turnover = 365 / 35.68 = 10.2 days

Req. 2

The inventory turnover ratio reflects how many times average inventory was produced and sold during the period. Thus, Dell produced and sold its average inventory nearly 36 times during the year.

The average days to sell inventory indicates the average time it takes the company to produce and deliver inventory to customers. Thus, Dell takes an average of about 10.2 days to produce and deliver its computer inventory to its customers.

**E7–14.**

CASE A – FIFO:

Goods available for sale for FIFO:

Units (19 + 25 + 50) 94

Amount ($304 + 325 + 950) $1,579

Ending inventory: 94 units – 65 units = 29.

Ending inventory (29 units x $19) $ 551

Cost of goods sold: [(19 units @ $16) +(25 units @ $13)

+ (21 units @ $19)] $1,028

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Inventory turnover | = | Cost of Goods Sold | = | $1,028 | = | 2.40 |
|  |  | Average Inventory |  | ($304+$551)/2 |  |  |

CASE B – LIFO:

Goods available for sale for LIFO:

Units (19 + 25 + 50) 94

Amount ($228 + 325 + 950) $1,503

Ending inventory: 94 units – 65 units = 29.

Ending inventory (19 units x $12) + (10 units x $13) $ 358

Cost of goods sold [(50 units @ $19) +(15 units @ $13)] $1,145

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Inventory turnover | = | Cost of Goods Sold | = | $1,145 | = | 3.91 |
|  |  | Average Inventory |  | ($228+$358)/2 |  |  |

The FIFO inventory turnover ratio is normally thought to be a more accurate indicator when prices are changing because LIFO can include very old inventory prices in ending inventory balances.

**E7–15.**

Req. 1 The reported ending inventory for Ford was $5,901 million. If FIFO were used exclusively, the ending inventory would have been $928 million higher than reported, or $6,829 million.

Req. 2 The restated cost of goods sold amount must reflect the restatement of both beginning and ending inventory:

Beginning inventory $865 million

Less: Ending inventory 928 million

Impact on COGS ($ 63 million)

If FIFO had been used exclusively, cost of goods sold would have been $113,345 - $63 = $113,282 million. In this case, FIFO cost of goods sold is less than LIFO cost of goods sold. This is likely the result of increasing prices.

Req. 3 When costs are rising, LIFO normally produces lower net income before taxes and lower current tax payments.

**E7–16.**

Req. 1 Net Income for 2014 will be Overstated. An understatement of purchases produces an understatement of cost of goods sold which produces an overstatement of the current period’s income.

BI + P - EI = CGS

Understate Understate

Req. 2 Net Income for 2015 will be Understated. An overstatement of purchases produces an overstatement of cost of goods sold which produces an understatement of the current period’s income.

BI + P - EI = CGS

Overstate Overstate

Req. 3 Retained Earnings for December 31, 2014, will be Overstated because of the overstatement of Net Income for 2014.

Req. 4 Retained Earnings for December 31, 2015, will be Correct because the overstatement of Net Income for 2014 and understatement of Net Income for 2015 will offset one another.

**E7–17.**

Req. 1

When the ending inventory is overstated, cost of goods sold is understated which in turn results in an overstatement of net income. Gibson’s income from operations should be reduced by $8,806,000 and tax expense should be reduced by $3,460,758 (i.e., $8,806,000 x 0.393). Therefore, net income should be:

As reported: $25,852,000

Increase in cost of goods sold (8,806,000)

Reduction in tax expense 3,460,758

Corrected income $20,506,758

Req. 2

The incorrect accounts can be summarized as follows:

***(a) Year of (b) Subsequent***

***Account*** ***Error*** ***Year***

Beginning inventory correct overstated

Cost of goods sold understated overstated

Ending inventory overstated correct

Income tax expense overstated understated

Net income overstated understated

Retained earnings overstated correct

Taxes payable\* overstated understated

\*The income tax payable for each year is incorrect by the same amount; therefore the total income tax paid was correct.

**E7–18.**

Req. 1

The $600 understatement of ending inventory produced pretax income amounts that were incorrect by the amount of $600 for each quarter. However, the effect on pretax income for each quarter was opposite (i.e., the first quarter pretax income was understated by $600, and in the second quarter it was overstated by $600). This self-correcting produces a correct combined income for the two quarters.

Req. 2

The error caused the pretax income for each quarter to be incorrect [see (1) above]; therefore, it produced incorrect EPS amounts for each quarter.

Req. 3

**First Quarter Second Quarter**

Sales revenue $11,000 $18,000

Cost of goods sold:

Beginning inventory $4,000 $ 4,400

Purchases 3,000 13,000

Goods available for sale 7,000 17,400

Ending inventory 4,400 9,000

Cost of goods sold 2,600 8,400

Gross profit 8,400 9,600

Expenses 5,000 6,000

Pretax income $3,400 $3,600

Req. 4

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **1st Quarter** | | | **2nd Quarter** | | |
|  | **Incorrect** | **Correct** | **Error** | **Incorrect** | **Correct** | **Error** |
| Beginning inventory | $4,000 | $4,000 | No error | $3,800 | $4,400 | $600 under |
| Ending inventory | 3,800 | 4,400 | $600 under | 9,000 | 9,000 | No error |
| Cost of goods sold | 3,200 | 2,600 | 600 over | 7,800 | 8,400 | 600 under |
| Gross profit | 7,800 | 8,400 | 600 under | 10,200 | 9,600 | 600 over |
| Pretax income | 2,800 | 3,400 | 600 under | 4,200 | 3,600 | 600 over |

**E7–19.**

**Current Year Previous Year Change**

Inventory $ 3,827 – $ 3,372 = $455

A/P 11,757 – 10,923 = 834

Increases in inventory cause cash flow from operations to decrease by $455 million. This amount is subtracted in the computation of cash flow from operations. PepsiCo was able to offset this by increasing its A/P by $834 million, which increases cash flow from operations. This amount is added in the computation of cash flow from operations. Effectively, the Company is letting its suppliers finance its growing inventories.

**E7–20. (Supplement A)**

Req. 1

This actual footnote from ConocoPhillips illustrates the impact of “dipping into a LIFO layer.'' Under LIFO, the cost of recently purchased items is assigned to cost of goods sold. When prices are rising, cost of goods sold, under LIFO, will include unit costs that are much higher than the unit costs assigned to ending inventory. This process will continue year after year so that the unit costs assigned to the ending inventory often will be significantly less than unit costs assigned to cost of goods sold. When a business permits inventory quantity to decline, old (and often very low) costs are allocated to cost of goods sold and are matched with revenues that usually are based on the current (higher) costs. As a result, a decline in LIFO inventory quantity often will produce a dramatic increase in net income for the company.

Req. 2

When FIFO is used, a decline in inventory quantity will not result in the dramatic increase in net income that was discussed in requirement (1) because FIFO inventory costs are represented by the most recent purchases.

**E7–21. (Supplement B)**

Req. 1

a. First–In, First–Out (FIFO) Periodic Calculation:

|  |  |  |
| --- | --- | --- |
| **Cost of Goods Sold** | | |
| **Units** | **Unit Cost** | **Total Cost** |
| 300 | $7 | $2,100 |
| 450 | 8 | 3,600 |
| 150 | 9 | 1,350 |
| Total |  | $7,050 |

b. First–In, First–Out (FIFO) Perpetual Calculation:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | **Cost of Goods Sold** | | |
| **Date** | **of Sale** | **Units** | **Unit Cost** | **Total Cost** |
| Jan. | 12 | 300 | $7 | $2,100 |
|  |  | 50 | 8 | 400 |
|  | 30 | 400 | 8 | 3,200 |
|  |  | 150 | 9 | 1,350 |
|  | Total |  | | $7,050 |

c. Last–In, First–Out (LIFO) Periodic Calculation:

|  |  |  |
| --- | --- | --- |
| **Cost of Goods Sold** | | |
| **Units** | **Unit Cost** | **Total Cost** |
| 750 | $9 | $6,750 |
| 150 | 8 | 1,200 |
| Total |  | $7,950 |

d. Last–In, First–Out (LIFO) Perpetual Calculation:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | **Cost of Goods Sold** | | |
| **Date** | **of Sale** | **Units** | **Unit Cost** | **Total Cost** |
| Jan | 12 | 350 | $8 | $2,800 |
|  | 30 | 550 | 9 | 4,950 |
|  | Total |  | | $7,750 |

Req. 2

You should recommend LIFO because the higher amount of cost of goods sold will decrease income before taxes and taxes paid. You should recommend the periodic calculation because it results in a higher amount for cost of goods sold which will decrease income before taxes and taxes paid. In practice, it also substantially reduces record keeping costs.

**E7–22. (Supplement C)**

|  |  |  |  |
| --- | --- | --- | --- |
| Req. 1 | Accounts receivable (+A) | 1,500 |  |
|  | Sales (+R, +SE) |  | 1,500 |
|  | Cost of goods sold (+E, −SE) | 975 |  |
|  | Inventory (−A) |  | 975 |

|  |  |  |  |
| --- | --- | --- | --- |
| Req. 2 | Cash (+A) ($1,500 x 0.98) | 1,470 |  |
|  | Sales discounts (+XR, −R, −SE) ($1,500 x 0.02) | 30 |  |
|  | Accounts receivable (−A) |  | 1,500 |

|  |  |  |  |
| --- | --- | --- | --- |
| Req. 3 | Cash (+A) | 1,500 |  |
|  | Accounts receivable (−A) |  | 1,500 |

|  |  |  |  |
| --- | --- | --- | --- |
| Req. 4 | Inventory (+A) | 9,000 |  |
|  | Accounts payable (+L) |  | 9,000 |

|  |  |  |  |
| --- | --- | --- | --- |
| Req. 5 | Accounts payable (−L) | 9,000 |  |
|  | Inventory (−A) ($9,000 x 0.03) |  | 270 |
|  | Cash (−A) ($9,000 x 0.97) |  | 8,730 |

|  |  |  |  |
| --- | --- | --- | --- |
| Req. 6 | Accounts payable (−L) | 9,000 |  |
|  | Cash (−A) |  | 9,000 |

PROBLEMS

**P7–1.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Item** | | **Amount** | **Explanation** |
| Ending inventory (physical count on December 31, 2014) | | $80,000 | Per physical inventory. |
| a. | Goods out on trial to customer | + 900 | Goods held by a customer on trial are still owned by the vendor; no sale or transfer of ownership has occurred. |
| b. | Goods in transit from supplier |  | Goods shipped by a supplier, F.O.B. destination, are owned by the supplier until delivery at destination. |
| c. | Goods in transit to customer |  | Goods shipped to customers, F.O.B. shipping point, are owned by the customer because ownership passed when they were delivered to the transportation company. The inventory correctly excluded these items. |
| d. | Goods held for customer pickup | – 1,750 | The goods sold, but held for customer pickup, are owned by the customer. Ownership has passed. |
| e. | Goods purchased and in transit | + 3,550 | Goods purchased and in transit, F.O.B. shipping point, are owned by the purchaser. |
| f. | Goods sold and in transit | + 700 | Goods sold and in transit, F.O.B. destination, are owned by the seller until they reach destination. |
| g. | Goods held on consignment | – 5,700 | Goods held on consignment are owned by the consignor (the manufacturer), not by the consignee. |
| Correct inventory, December 31, 2014 | | $77,700 |  |

**P7–2.**

a) Goods available for sale for all methods:

**Unit Total**

**Units Cost Cost**

January 1, 2015–Beginning inventory 400 $3.00 $ 1,200

January 30, 2015–Purchase 300 3.40 1,020

May 1, 2015–Purchase 460 4.00 1,840

Goods available for sale 1,160 $4,060

Ending inventory: 1,160 units – (160 + 700) = 300 units

b) and c)

1. Average cost:

Average unit cost $4,060 ÷ 1,160 = $3.50

Ending inventory (300 units x $3.50) $1,050

Cost of goods sold1 ($4,060 – $1,050) $3,010

1. Direct computation of Cost of goods sold: (860 units x $3.50) = $3,010

2. First-in, first-out:

Ending inventory (300 units x $4.00) $1,200

Cost of goods sold2 ($4,060 – $1,200) 2,860

1. Direct computation of Cost of goods sold: [(400 units @ $3) + (300 units @ $3.40) + (160 units @ $4)] = $2,860

3. Last-in, first-out:

Ending inventory (300 units x $3.00) 900

Cost of goods sold3 ($4,060 – $900) $3,160

1. Direct computation of Cost of goods sold: [(100 units @ $3) + (300 units @ $3.40) + (460 units @ $4)] = $3,160

4. Specific identification:

Ending inventory ( 0 units x $3.00) +

( 204 units x $3.40) +

( 96 units x $4.00) $1,077.60

Cost of goods sold4 ($4,060 – $1,077.60) $2,982.40

1. Direct computation of Cost of goods sold: [(400 units @ $3) + (96 units @ $3.40) + (364 units @ $4)] = $2,982.40

**P7–3.**

Req. 1

**DONNER COMPANY**

**Partial Income Statement**

**For the Month Ended January 31, 2014**

**(a) (b) (c) (d)**

**Average Specific**

**Cost FIFO LIFO Identification**

Sales revenue\* $9,920 $9,920 $9,920 $9,920

Cost of goods sold\*\* 3,565 3,085 4,040 3,250.10

Gross profit $ 6,355 $ 6,835 $ 5,880 $ 6,669.90

Computations:

\*620 units @ $16 = $9,920.

\*\*Cost of goods sold:

**Average Specific**

**Units Cost FIFO LIFO Identification**

Beginning inventory 500 $2,365 $2,365 $2,365 $2,365

Purchases (net)\*\*\* 760 4,880 4,880 4,880 4,880

Goods available for sale 1,260 7,245 7,245 7,245 7,245

Ending inventory\*\*\*\* 640 3,680 4,160 3,205 3,994.90

Cost of goods sold\*\*\*\*\* 620 $3,565 $3,085 $4,040 $3,250.10

\*\*\*Purchases:

January 12 600 units @ $6 = $3,600

January 26 160 units @ $8 = 1,280

Totals 760 $4,880

\*\*\*\*Ending inventory:

a. Average cost: Units Amount

Beginning inventory 500 $2,365

Purchases (per above) 760 4,880

1,260 $7,245

Average cost:

$7,245 ÷ 1,260 units = $5.75

Ending inventory:

640 units x $5.75 = $3,680

**P7–3. (continued)**

Req. 1 (continued)

b. ***FIFO***: 160 units @ $8 = $1,280

480 units @ $6 = 2,880

640 $4,160

c. ***LIFO:*** 500 units @ $4.73= $2,365

140 units @ $6 = 840

640 $3,205

d. Specific identification:

130 units @ $4.73= $ 614.90

350 units @ $6 = 2,100

160 units @ $8 = 1,280

640 $3,994.90

\*\*\*\*\*Cost of goods sold (direct computations):

a. Average cost: Units Amount

Beginning inventory 500 $2,365

Purchases (per above) 760 4,880

1,260 $7,245

Average cost:

$7,245 ÷ 1,260 units = $5.75

Cost of goods sold:

620 units x $5.75 = $3,565

b. ***FIFO***: 500 units @ $4.73= $2,365

120 units @ $6 = 720

620 $3,085

c. ***LIFO:*** 160 units @ $8 = $1,280

460 units @ $6 = 2,760

620 $4,040

d. Specific identification:

370 units @ $4.73= $1,750.10

250 units @ $6 = 1,500.00

620 $3,250.10

**P7–3. (continued)**

Req. 2

FIFO reports a higher pretax income than LIFO because (1) prices are rising and (2) FIFO allocates the old (lower) unit costs to cost of goods sold. For the same reason, FIFO will report a higher EPS amount because it produces a higher pretax income than LIFO.

Req. 3

Because LIFO reports a lower pretax income than FIFO for the reasons given in Requirement (2), the former will derive less income tax by ($6,835 – $5,880) x 30% = $286.50.

Req. 4

LIFO will provide a more favorable cash flow than FIFO of $286.50 because less cash will be paid for income tax in the current year than would be paid under FIFO (for the reasons given in Requirements 2 and 3).

**P7–4.**

Req. 1

Sales revenue $1,151,500

Cost of goods sold\* (42 @ $10,000) + (5 @ $12,000) 480,000

Gross profit 671,500

Expenses 300,000

Pretax income $ 371,500

\*Ending inventory (15 @ $12,000) $ 180,000

Req. 2

Sales revenue $1,151,500

Cost of goods sold\*\* (20 @ $9,000) + (27 @ $10,000) 450,000

Gross profit 701,500

Expenses 300,000

Pretax income $ 401,500

\*\*Ending inventory (20 @ $12,000) + (15 @ $10,000) $ 390,000

Req. 3

Pretax income increased by $30,000 because of the decision to purchase the additional units at the end of the year. This decision provided lower cost units to allocate to cost of goods sold, which increased pretax income.

There is evidence of deliberate income manipulation. Although no information is provided as to expected future sales, nor the time to order and receive units, the timing of the purchase of the additional units is suspect because the cost of the equipment will be decreased again during the first quarter of next year.

(Instructional Note–This problem illustrates the way that income can be manipulated under LIFO by buying, or not buying, at year-end. This opportunity to manipulate income is not available under weighted average or FIFO.)

**P7–5.**

Req. 1

**Prices Rising Prices Falling**

**A B C D**

**FIFO LIFO FIFO LIFO**

Sales revenue (500 units) $15,000 $15,000 $15,000 $15,000

Cost of goods sold:

Beginning inventory

(300 units) 3,300 3,300 3,600 3,600

Purchases (400 units) 4,800 4,800 4,400 4,400

Goods available for sale 8,100 8,100 8,000 8,000

Ending inventory (200 units)\* 2,400 (a) 2,200 (b) 2,200 (c) 2,400 (d)

Cost of goods sold\*\*

(500 units) 5,700 5,900 5,800 5,600

Gross profit 9,300 9,100 9,200 9,400

Expenses 4,000 4,000 4,000 4,000

Pretax income 5,300 5,100 5,200 5,400

Income tax expense (30%) 1,590 1,530 1,560 1,620

Net income $3,710 $3,570 $3,640 $3,780

\*Inventory computations:

(a) FIFO: 200 units @ $12.00 = $2,400

(b) LIFO: 200 units @ $11.00 = 2,200

(c) FIFO: 200 units @ $11.00 = 2,200

(d) LIFO: 200 units @ $12.00 = 2,400

\*\* Cost of goods sold (direct computations):

(a) FIFO: [(300 units @ $11) + (200 units @ $12)] = $5,700

(b) LIFO: [(100 units @ $11) + (400 units @ $12)] = $5,900

(c) FIFO: [(300 units @ $12) + (200 units @ $11)] = $5,800

(d) LIFO: [(100 units @ $12) + (400 units @ $11)] = $5,600

Req. 2

The above tabulation demonstrates that when prices are rising, FIFO gives a higher net income than LIFO. When prices are falling, the opposite effect results. The difference in pretax income (as between FIFO and LIFO) is the same as the difference in cost of goods sold but in the opposite direction. The difference in net income (i.e., after tax) is equal to the difference in cost of goods sold multiplied by one minus the income tax rate.

**P7–5. *(continued)***

Req. 3

When prices are rising, LIFO derives a more favorable cash position (than FIFO) equal to the difference in income tax. In contrast, when prices are falling, FIFO derives a more favorable cash position equal to the difference in income tax.

Req. 4

Either method can be defended reasonably. If one focuses on current income and EPS, FIFO derives a more favorable result (higher than LIFO when prices are rising).

Alternatively, if one focuses on income tax expense and cash position, when prices are rising, LIFO derives more favorable results (lower taxes, better cash position).

However, these comparative results will reverse if prices fall.

FIFO provides a better balance sheet valuation (higher current asset value) but on the income statement does not match current expense (cost of goods sold) with current revenues. Alternatively, LIFO better matches expenses with revenues but produces a less relevant inventory valuation on the balance sheet.

**P7–6.**

Req. 1

**JAFFA COMPANY**

**Income Statement (LCM basis)**

**For the Year Ended December 31, 2014**

Sales revenue $300,000

Cost of goods sold:

Beginning inventory $ 33,000

Purchases 184,000

Goods available for sale 217,000

Ending inventory 37,850\*

Cost of goods sold 179,150

Gross profit 120,850

Operating expenses 62,000

Pretax income 58,850

Income tax expense ($58,850 x 30%) 17,655

Net income $ 41,195

\*Computation of ending inventory on LCM basis:

**Replacement**

**Item Quantity Original Cost Cost (Market) LCM Valuation**

A 3,050 x $3 = $ 9,150 x $4 = $12,200 $ 9,150

B 1,500 x5.5 = 8,250 x3.5 = 5,250 5,250

C 7,100 x1.5 = 10,650 x3.5 = 24,850 10,650

D 3,200 x 7 = 22,400 x 4 = 12,800 12,800

Total $50,450 $55,100

LCM inventory valuation $37,850

Req. 2

**Amount of**

**FIFO LCM Change**

**Item Changed Cost Basis Basis (Decrease)**

Ending inventory $ 50,450 $ 37,850 ($12,600)

Cost of goods sold 166,550 179,150 12,600

Gross profit 133,450 120,850 ( 12,600)

Pretax income 71,450 58,850 ( 12,600)

Income tax expense 21,435 17,655 ( 3,780)

Net income 50,015 41,195 ( 8,820)

**P7–6. (continued)**

Req. 2 (continued)

Analysis

Ending inventory, cost of goods sold, gross profit, and pretax income each changed by the change in the valuation of the ending inventory.

Income tax expense decreased because the increase in expense reduced pretax income.

Net income was reduced by $8,820 (increased expense of $12,600) less the income tax savings of $3,780 = $8,820.

Req. 3

The inventory costing methods (average cost, FIFO, LIFO, and specific identification) apply the cost and matching principles. Cost of goods sold, under these principles, is the actual cost incurred for the merchandise sold during the period; this cost is matched with sales revenue of the period.

LCM is an exception to the cost principle. Conceptually, LCM is based on the view that when replacement is less than the cost incurred for the merchandise, any such goods on hand should be valued at the lower replacement (market) price. The effect is to include the holding loss (i.e., the drop from cost to market) in the cost of goods sold amount for the period in which the replacement cost dropped. LCM recognizes holding losses in this manner; however, it does not recognize holding gains.

Req. 4

LCM reduced pretax income and income tax expense. There was a cash savings of $3,780 for 2014 (assuming the LCM results are included on the income tax return). In subsequent periods pretax income will be greater by the $12,600 and hence, income tax and cash outflow will be more. The only real gain to the company would be the time value of money between 2014 and the subsequent periods when increased income taxes must be paid (of course, a change in tax rates would affect this analysis).

**P7–7.**

Req. 1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  | **Projected  change** | | | | | **No change from beginning of year** | | | | |
| Inventory | = | Cost of Goods Sold |  |  | $7,283,566 | = | 15.1 |  |  | $7,283,566 | = | 12.5 |  |
| Turnover |  | Average Inventory |  |  | $483,555\* |  |  |  |  | $582,500\*\* |  |  |  |

\* ($582,500 + $384,610) ÷ 2

\*\* ($582,500+ $582,500) ÷ 2

Req. 2

Projected decrease in inventory = $582,500– $384,610= $197,890

A $197,890 increase in cash flow from operating activities, because a decrease in inventory would increase cash, all other items held constant.

Req. 3

An increase in the inventory turnover ratio indicates an increase in the number of times average inventory was produced and sold during the period. A higher ratio indicates that inventory moves more quickly through the production process to the ultimate customer. As a consequence, the company can maintain less inventory on hand, all other things being equal. This can benefit the company because less money is tied up in inventory and as a result, cash flow from operations will be higher. The excess cash can be invested, earning interest income, or used to reduce borrowings, reducing interest expense.

**P7–8.**

Req. 1

A change that increases beginning inventory will decrease net income while a change that increases ending inventory will increase net income.

***Impact on International Paper net***

***income (in millions)***

Change in ending inventory $350

Change in beginning inventory (334)

Increase in pretax income 16

Increase in taxes (30%) (4.8)

Increase in net income $ 11.2

Use of FIFO would result in an increase of $11.2 million in International Paper reported net income. The change would result in an increase in income taxes because the LIFO conformity rule precludes use of LIFO for tax purposes if a method other than LIFO were used for financial reporting.

Reported net income $1,341.0

Increase 11.2

FIFO net income $1,352.2

Req. 2

If FIFO had been used, the ending inventory would have been $350 million higher. Instead LIFO was used and the $350 million was allocated to cost of goods sold in earlier accounting periods (including the current year). Thus, the cumulative difference between LIFO pretax income and FIFO pretax income was $350 million or a difference of $245 million after taxes ($350 x .7). Therefore, retained earnings on a FIFO basis would have been $3,575 million (i.e., $245 + $3,330).

Req. 3

The reduction in taxes (compared to FIFO) was $4.8 million (calculated in Req. 1).

**P7–9.**

Req. 1

**2014 2015 2016 2017**

Sales revenue $2,025,000 $2,450,000 $2,700,000 $2,975,000

Cost of goods sold 1,505,000 1,645,000\* 1,764,000\* 2,113,000

Gross profit 520,000 805,000 936,000 862,000

Expenses 490,000 513,000 538,000 542,000

Pretax income 30,000 292,000 398,000 320,000

Income tax expense (30%) 9,000 87,600 119,400 96,000

Net income $ 21,000 $ 204,400 $ 278,600 $ 224,000

\*There was an *overstatement* of the ending inventory in 2015 by $18,000; this caused cost of goods sold for 2015 to be understated and 2015 net income to be overstated. Similarly, because this error was carried over automatically to 2016 as the beginning inventory, cost of goods sold for 2016 was overstated and 2016 net income understated. The amounts for 2014 and 2017 were not affected. This is called a self-correcting or counterbalancing error. Cumulative net income for the four-year period was not affected.

Req. 2

**2014 2015 2016 2017**

Gross profit ratio (gross profit ÷ sales):

Before correction:

$520,000 ÷ $2,025,000 = .26

$823,000 ÷ $2,450,000 = .34

$918,000 ÷ $2,700,000 = .34

$862,000 ÷ $2,975,000 = .29

After correction:

No change .26

$805,000 ÷ $2,450,000 = .33

$936,000 ÷ $2,700,000 = .35

No change .29

Req. 3

The effect of the error on income tax expense was:

**2015 2016**

Income tax expense reported $93,000 $114,000

Correct income tax expense 87,600 119,400

Income tax expense overstatement (understatement) $ 5,400 $(5,400)

**P7–10. (Supplement A)**

Req. 1 Pretax operating profit (loss) for the current year had FIFO accounting been employed instead of LIFO.

Difference in beginning inventory\* (LIFO to FIFO) $2,076

Less: Difference in ending inventory\* (LIFO to FIFO) 2,226

Difference in cost of goods sold (LIFO to FIFO) $ (150)

Difference in Pretax Net Income = $150 increase

# (\*The differences are the beginning and ending LIFO Reserve.)

Req. 2 Since prices are rising, LIFO liquidations increase net income before taxes. The change in pretax operating profit during the current year is given in the footnote as $23 million. As a consequence, net income before taxes would be $23 million lower had there been no inventory quantity reduction.

ALTERNATE PROBLEMS

**AP7−1.**

a) Goods available for sale for all methods:

**Unit Total**

**Units Cost Cost**

January 1, 2014–Beginning inventory 390 $32.00 $12,480

February 20, 2014–Purchase 700 34.25 23,975

June 30, 2014–Purchase 460 37.00 17,020

Goods available for sale 1,550 $53,475

Ending inventory: 1,550 units – (70 + 750) = 730 units

b) and c)

1. Average cost:

Average unit cost $53,475 ÷ 1,550=$34.50.

Ending inventory (730 units x $34.50) $25,185

Cost of goods sold1 ($53,475 – $25,185) $28,290

1. Direct computation of Cost of goods sold: (820 units @ $34.50) = $28,290

2. First-in, first-out:

Ending inventory (460 units x $37) +

(270 units x $34.25) $26,267.50

Cost of goods sold2 ($53,475 – $26,267.50) $27,207.50

1. Direct computation of Cost of goods sold: [(390 units @ $32) + (430 units @ $34.25)] = $27,207.50

3. Last-in, first-out:

Ending inventory (390 units x $32) +

(340 units x $34.25) $24,125

Cost of goods sold3 ($53,475 – $24,125) $29,350

1. Direct computation of Cost of goods sold: [(460 units @ $37) + (360 units @ $34.25)] = $29,350

**AP7−1. (continued)**

4. Specific identification:

Ending inventory (658 units x $34.25) +

(72 units x $37) $25,200.50

Cost of goods sold4 ($53,475 – $25,200.50) $28,274.50

1. Direct computation of Cost of goods sold: [(390 units @ $32) + (42 units @ $34.25) + (388 units @ $37)] = $28,274.50

**AP7–2.**

Req. 1

**NEWRIDGE COMPANY**

**Partial Income Statement**

**For the Month Ended January 31, 2015**

**(a) (b) (c) (d)**

**Average Specific**

**Cost FIFO LIFO Identification**

Sales revenue\* $3,840 $3,840 $3,840 $3,840

Cost of goods sold\*\* 2,256 2,040 2,560 2,060

Gross profit $1,584 $1,800 $1,280 $1,780

CHANGED

**Computations:**

**\*Sales revenue = 240 units @ $16 = $3,840.**

**\*\*Cost of Goods Sold Amounts:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| a) | **Average Cost** | | |  | | |
|  | Number of Units | x | Unit Cost | | = | Total Cost | |  |
|  | 120 | x | $8 | | = | $ 960 | |  |
|  | 380 | x | 9 | | = | 3,420 | |  |
|  | 200 | x | 11 | | = | 2,200 | |  |
|  | 700 |  | Available for Sale | |  | $6,580 | |  |
|  |  |  |  | |  |  | |  |
|  |  | = | $6,580 | | = | $9.40 per unit | | |
|  |  | 700 units | |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Cost of Goods Sold | = | $9.40 x 240 units | |
|  |  | = | $2,256 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | **Cost of Goods Sold** | **Units** | **Unit Cost** | **Total Cost** |
| b) | **FIFO** | First Units in (Beginning Inventory) | 120 | $8 | $ 960 |
|  |  | Next Units in (January 12) | 120 | 9 | 1,080 |
|  |  | Total Cost of Goods Sold (FIFO) | 240 |  | $2,040 |
|  |  |  |  |  |  |
| c) | **LIFO** | Last Units in (January 26) | 200 | $11 | $2,200 |
|  |  | Next Units in (January 12) | 40 | 9 | 360 |
|  |  | Total Cost of Goods Sold (LIFO) | 240 |  | $2,560 |

**AP7–2. (continued)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | **Cost of Goods Sold** | **Units** | **Unit Cost** | **Total Cost** |
| d) | **Specific** | First sale | 100 | $ 8 | $ 800 |
|  | **Identification** | Second sale | 140 | 9 | 1,260 |
|  |  | Total Cost of Goods Sold | 240 |  | $2,060 |

**Cost of Ending Inventory Amounts:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| a) | **Average Cost** | |  | |  |  |  | |
|  | Ending Inventory | = | $9.40 x 460 units | | | | |  |
|  |  | = | $4,324 |  | |  | |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | **Ending Inventory** | **Units** | **Unit Cost** | **Total Cost** |
| b) | **FIFO** | Last Units in (January 26) | 200 | $11 | $2,200 |
|  |  | Next Units in (January 12) | 260 | 9 | 2,340 |
|  |  | Total Ending Inventory FIFO | 460 |  | $4,540 |
|  |  |  |  |  |  |
| c) | **LIFO** | First Units in (Beginning Inventory) | 120 | $8 | $ 960 |
|  |  | Next Units in (January 12) | 340 | 9 | 3,060 |
|  |  | Total Ending Inventory LIFO | 460 |  | $4,020 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | **Ending Inventory** | **Units** | **Unit Cost** | **Total Cost** |
| d) | **Specific** | Beginning | 20 | $ 8 | $ 160 |
|  | **Identification** | January 12 | 240 | 9 | 2,160 |
|  |  | January 26 | 200 | 11 | 2,200 |
|  |  | Total Ending Inventory (Spec.) | 460 |  | $4,520 |

Req. 2

FIFO reports a higher pretax income than LIFO because (1) prices are rising and (2) FIFO allocates the old (lower) unit costs to cost of goods sold. For the same reason, FIFO will report a higher EPS amount because it produces a higher pretax income than LIFO.

**AP7–2. (continued)**

Req. 3

Because LIFO reports a lower pretax income than FIFO for the reasons given in Requirement (2), LIFO will result in lower income tax by ($1,800 – $1,280) x 30% = $156.

Req. 4

LIFO will provide a more favorable cash flow than FIFO of $156 because less cash will be paid for income tax than would be paid under FIFO (for the reasons given in Requirements 2 and 3).

**AP7–3.**

Req. 1

**Prices Rising Prices Falling**

**A B C D**

**FIFO LIFO FIFO LIFO**

Sales revenue (510 units) $13,260 $13,260 $13,260 $13,260

Cost of goods sold:

Beginning inventory

(340 units) 3,060 3,060 3,400 3,400

Purchases (410 units) 4,100 4,100 3,690 3,690

Goods available for sale 7,160 7,160 7,090 7,090

Ending inventory (240 units)\* 2,400 (a) 2,160 (b) 2,160 (c) 2,400 (d)

Cost of goods sold\*\*

(510 units) 4,760 5,000 4,930 4,690

Gross profit 8,500 8,260 8,330 8,570

Expenses 5,000 5,000 5,000 5,000

Pretax income 3,500 3,260 3,330 3,570

Income tax expense (30%) 1,050 978 999 1,071

Net income $2,450 $2,282 $2,331 $2,499

\*Ending inventory computations:

(a) FIFO: 240 units @ $10.00 = $2,400

(b) LIFO: 240 units @ $9.00 = 2,160

(c) FIFO: 240 units @ $9.00 = 2,160

(d) LIFO: 240 units @ $10.00 = 2,400

\*\* Cost of goods sold (direct computations):

(a) FIFO: [(340 units @ $9) + (170 units @ $10)] = $4,760

(b) LIFO: [(410 units @ $10) + (100 units @ $9)] = $5,000

(c) FIFO: [(340 units @ $10) + (170 units @ $9)] = $4,930

(d) LIFO: [(410 units @ $9) + (100 units @ $10)] = $4,690

Req. 2

The above tabulation demonstrates that when prices are rising, FIFO gives a higher net income than LIFO. When prices are falling, the opposite effect results. The difference in pretax income (as between FIFO and LIFO) is the same as the difference in cost of goods sold but in the opposite direction. The difference in net income (i.e., after tax) is equal to the difference in cost of goods sold multiplied by one minus the income tax rate.

**AP7–3. (continued)**

Req. 3

When prices are rising, LIFO derives a more favorable cash position (than FIFO) equal to the difference in income tax. In contrast, when prices are falling, FIFO derives a more favorable cash position equal to the difference in income tax.

Req. 4

Either method can be defended reasonably. If one focuses on current income and EPS, FIFO derives a more favorable result (higher than LIFO when prices are rising).

Alternatively, if one focuses on income tax expense and cash position, when prices are rising, LIFO derives more favorable results (lower taxes, better cash position).

However, these comparative results will reverse if prices fall.

FIFO provides a better balance sheet valuation (higher current asset value) but on the income statement does not match current expense (cost of goods sold) with current revenues. Alternatively, LIFO better matches expenses with revenues but produces a less relevant inventory valuation on the balance sheet.

**AP7–4.**

Req. 1

**COLCA COMPANY**

**Income Statements Corrected**

**2014 2015 2016 2017**

Sales revenue $60,000 $63,000 $65,000 $68,000

Cost of goods sold 39,000 41,000\* 46,000\* 46,000

Gross profit 21,000 22,000 19,000 22,000

Expenses 16,000 17,000 17,000 19,000

Pretax income $ 5,000 $ 5,000 $ 2,000 $ 3,000

\* Increase in the ending inventory in 2015 by $2,000 causes a decrease in cost of goods sold by the same amount. Therefore, cost of goods sold for 2015 is $43,000 – $2,000 = $41,000. Because the 2015 ending inventory is carried over as the 2016 beginning inventory, cost of goods sold for 2016 was understated by $2,000. Thus, the correct cost of goods sold amount for 2016 is $44,000 + $2,000 = $46,000.

**AP7–4. *(continued)***

Req. 2

**2014 2015 2016 2017**

Gross profit ratio (gross profit ÷ sales):

Before correction:

$21,000 ÷ $60,000 = .35

$20,000 ÷ $63,000 = .32

$21,000 ÷ $65,000 = .32

$22,000 ÷ $68,000 = .32

After correction:

No change .35

$22,000 ÷ $63,000 = .35

$19,000 ÷ $65,000 = .29

No change .32

Req. 3

The error would have the following effect on income tax expense:

2015 2016

*Before correction:*

2015: $3,000 x 30% = $900

2016: $4,000 x 30% = $1,200

*After correction:*

2015: $5,000 x 30% = 1,500

2016: $2,000 x 30% =               600

Difference $ (600) $ 600

The income tax expense would have been understated by $600 in 2015 and overstated by $600 in 2016.

CASES AND PROJECTS

### ANNUAL REPORT CASES

**CP7–1**

Req. 1

The company held $378,426 thousand of merchandise inventory at the end of the current year. This is disclosed on the balance sheet.

Req. 2

The company purchased $2,108,695 thousand during the current year. The beginning and ending inventory balances are disclosed on the balance sheet and cost of goods sold is disclosed on the income statement. Purchases during the year can be computed by rearranging the basic inventory equation (BI + P – EI = CGS) or using a T-account:

Cost of goods sold $2,031,477 thousand

+ Ending inventory 378,426 thousand

– Beginning inventory (301,208) thousand

Purchases $2,108,695 thousand

|  |  |  |  |
| --- | --- | --- | --- |
| **Inventory** | | | |
| Beg. Balance | 301,208 |  |  |
| Purchases | 2,108,695 | 2,031,477 | Cost of goods sold |
| End. Balance | 378,426 |  |  |

Req. 3

The company uses the average cost method to determine the cost of its inventory. This is disclosed in Note 2 under “Merchandise Inventory.” It indicates that inventory is valued at the lower of average cost or market.

Req. 4

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | **American Eagle Outfitters** | | | | |
|  | Inventory | = | Cost of Goods Sold |  |  | $2,031,477 | = | 5.98 |  |
|  | Turnover |  | Average Inventory |  |  | 339,817\* |  |  |  |

\*(301,208 + $378,426) / 2

It indicates how many times the average inventory was purchased and sold during the year.

**CP7–2.**

Req. 1

Given the general trend of little or no inflation every year, it would be unlikely that the replacement cost of Urban Outfitters’ inventory would be lower than its current book value. And, unless a severe market downturn (or extreme change in fashion) took place, it would be unlikely that the net realizable value of the company’s current season inventory would drop below its original cost. Since the end of the year coincides with the end of the selling season for winter clothes, only these remaining goods are likely to have a net realizable value below original cost. Therefore, it is likely that only these items would require a writedown at the end of the year, because the company’s book value for other inventory items will be lower than both replacement cost and net realizable value.

Req. 2

The company uses the first-in, first-out method to determine the cost of its inventory. This is disclosed in Note 2 under “Inventories.”

Req. 3

If the company had overstated its ending inventory by $10 million, its income before income taxes would be overstated by $10 million. Recall that ending inventory reduces cost of goods sold, which is an expense. Therefore, cost of goods sold would be $10 million lower and income before income taxes would be $10 million higher (i.e., $298,831,000 reported instead of the correct amount of $288,831,000).

Req. 4

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | **Urban Outfitters** | | | | |
|  | Inventory | = | Cost of Goods Sold |  |  | $1,613,265 | = | 6.73 |  |
|  | Turnover |  | Average Inventory |  |  | 239,817\* |  |  |  |

\* (250,073 + $229,561) / 2

It indicates how many times the average inventory was purchased and sold during the year.

**CP7–3**

Req. 1

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  | **American Eagle Outfitters** | | | | | **Urban Outfitters** | | | | |
|  | Inventory | = | Cost of Goods Sold |  |  | $2,031,477 | = | 5.98 |  |  | $1,613,265 | = | 6.73 |  |
|  | Turnover |  | Average Inventory |  |  | 339,817\* |  |  |  |  | 239,817\*\* |  |  |  |

\*(301,208 + $378,426) / 2

\*\* (250,073 + $229,561) / 2

Urban Outfitters has a higher inventory turnover ratio than American Eagle Outfitters. This higher ratio implies that Urban Outfitters was more successful than American Eagle in moving inventory quickly through the purchasing and sales processes to the ultimate customer.

Req. 2

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Industry Average** | **American Eagle Outfitters** | **Urban Outfitters** |
|  | 4.92 | 5.98 | 6.73 |

Both American Eagle Outfitters and Urban Outfitters have a higher inventory turnover than the industry average. That means that they are doing a better job at managing inventory levels, and moving inventory quickly through the purchasing and sales processes to the ultimate customer.

### FINANCIAL REPORTING AND ANALYSIS CASES

**CP7–4.**

Req. 1 Production costs included in inventory become cost of goods sold expense on the income statement in the period the goods are sold.

Req. 2 Since some of the current year’s production is still not sold, some of these production-related costs that were added to work-in-process inventory during the production process are still in work-in-process inventory or in finished goods. This increases total inventory. Since the items have not been sold, the amounts have not been included in cost of goods sold expense. Thus total expenses are lower which in turn increases net income.

**CP7–5.**

Req. 1

|  |  |  |  |
| --- | --- | --- | --- |
| **Caterpillar** | **2011** | **2010** | **2009** |
| Inventories - LIFO | $14,544 | $9,587 | $6,360 |
| Plus: LIFO Reserve | 2,422 | 2,575 | 3,022 |
| Inventories - FIFO | $16,966 | $12,162 | $9,382 |
|  |  |  |  |
| Cost of goods sold: LIFO | $43,578 | $30,367 |  |
| + Beginning LIFO Reserve | 2,575 | 3,022 |  |
| - Ending LIFO Reserve | 2,422 | 2,575 |  |
| Cost of goods sold: FIFO | $43,731 | $30,814 |  |
|  |  |  |  |

2011 LIFO

Inventory turnover = $43,578 = 3.61

($14,544 + $9,587) ÷ 2

2011 FIFO

Inventory turnover = $43,731 = 3.0

($16,966 + $12,162) ÷ 2

2010 LIFO

Inventory turnover = $30,367 = 3.8

($9,587 + $6,360) ÷ 2

2010 FIFO

Inventory turnover = $30,814 = 2.9

($12,162 + $9,382) ÷ 2

**CP7–5. (continued)**

**DEERE (as provided)**

2011 LIFO 5.9

2011 FIFO 4.2

Req. 2

In all three cases, the ratio is higher under LIFO than FIFO. The LIFO beginning and ending inventory numbers (the denominator) are artificially small because they reflect old lower costs. LIFO cost of goods sold (the numerator) reflects the new higher costs. Thus, the numerator in the LIFO calculation does not relate in a meaningful way to the denominator.

Req. 3

The FIFO inventory turnover ratio is normally thought to be a more accurate indicator when prices are changing because LIFO can include very old inventory prices in ending inventory balances. According to the FIFO ratios, Caterpillar has used inventory no more efficiently during the current period than the prior period. However, it is less efficient than John Deere. Such comparisons should also consider any changes in inventory mix between periods or companies, which may also affect the ratio.

*CRITICAL THINKING CASES*

**CP7–6.**

1. The press release states that management believes LIFO is more appropriate because it better matches current costs with current revenues, and also mentions that there are tax benefits to adopting LIFO for tax purposes.

2. The decrease in pre-tax income was $28,165,000. Thus, ending inventory was decreased by $28,165,000 and cost of goods sold was increased by $28,165,000. Since the company is in the 35% tax bracket, this resulted in a decrease in tax expense of .35 x $28,165,000 = $9,858,000 (rounded to the nearest thousand) and a decrease in net income of $ 18,307,000.

3. This $9,858,000 tax postponement is significant and is likely to be the main reason that management adopted LIFO. A decrease in net income is normally a negative sign to analysts, since it normally implies a decline in future cash flows. In this case, however, the change had a positive cash flow effect. Most analysts would look favorably on a change, the only effect of which is to provide the company with an additional $9,858,000 in cash.

**CP7–7.**

To: The Files

From: The New Staff Member

Re: Effect of restatement

1. The Company understated purchases by $47.3 million. This causes cost of goods sold to be understated and pre-tax income to be overstated by $47.3 million. Net income is overstated by that amount times 1 – tax rate:

$47.3 x (1 – .404) = $28.2 million overstatement

2. The restatement of the purchases caused the board to rescind management’s bonuses. Accordingly, pre-tax income will increase by $2.2 million, and net income will increase by that amount times 1 – tax rate.

$2.2 x (1 – .404) = $1.3 million increase

3. If it is assumed that bonuses are a fixed portion of net income, the bonus rate can be roughly estimated using the amounts computed in parts 1 and 2.

Change in bonus = Bonus rate per dollar of net income

Change in net income

$2.2 million = $.078 per dollar of net income (or 7.8%)

$28.2 million

4. The Board likely tied management compensation to net income to align the interests of management with that of shareholders. Typically, increases in net income will fuel a rise in the stock price. This type of compensation scheme does create the possibility that unethical management may alter the financial results to receive higher bonuses.

*FINANCIAL REPORTING AND ANALYSIS PROJECTS*

**CP7–8.**

The solution to this case will depend on the company and/or accounting period selected for analysis.

**CONTINUING CASE**

**CC7.**

Req. 1

ITEM A. First–In, First–Out (FIFO) Last–In, First–Out (LIFO)

|  |  |  |
| --- | --- | --- |
| **Cost of Goods Sold** | | |
| **Units** | **Unit Cost** | **Total Cost** |
| 40 | $6 | $240 |
| 80 | 8 | 640 |
| 40 | 9 | 360 |
| Total |  | $1,240 |

|  |  |  |
| --- | --- | --- |
| **Cost of Goods Sold** | | |
| **Units** | **Unit Cost** | **Total Cost** |
| 100 | $9 | $900 |
| 60 | 8 | 480 |
| Total |  | $1,380 |

ITEM B. First–In, First–Out (FIFO) Last–In, First–Out (LIFO)

|  |  |  |
| --- | --- | --- |
| **Cost of Goods Sold** | | |
| **Units** | **Unit Cost** | **Total Cost** |
| 40 | $6 | $240 |
| 80 | 5 | 400 |
| 40 | 3 | 120 |
| Total |  | $760 |

|  |  |  |
| --- | --- | --- |
| **Cost of Goods Sold** | | |
| **Units** | **Unit Cost** | **Total Cost** |
| 100 | $3 | $300 |
| 60 | 5 | 300 |
| Total |  | $600 |

Req. 2

ITEM A.

(a) Net income: You should recommend FIFO because the lower amount of cost of goods sold will result in higher net income.

(b) Income taxes paid: You should recommend LIFO because the higher amount of cost of goods sold will decrease income before taxes and taxes paid.

ITEM B.

(a) Net income: You should recommend LIFO because the lower amount of cost of goods sold will result in higher net income.

(b) Income taxes paid: You should recommend FIFO because the higher amount of cost of goods sold will decrease income before taxes and taxes paid.