5. a. This problem tests the interrelationships among accounting methods and differentiates between the flow of units and the flow of costs. Keep in mind that some factors are affected by the choice of accounting method but others are not.

Opening inventory (in this problem), purchases, and actual inventory turnover are not a function of accounting method. Physical turnover is based on units while reported turnover is based on dollars and is affected by the choice of accounting method. Thus the accounting method can only approximate the physical turnover.

Opening inventory is $500 for all methods. Since the firm replenishes inventory every month, its actual inventory turnover is 12. Thus, in units, its cost of goods sold is 12 times its inventory level. That is, 12 months of inventory were sold; one month remains.

The solution begins with the weighted average method:

Cost-of-goods sold = units sold x average cost = $12,000

As closing inventory = units in inventory x average cost, and, units sold are 12 times units in inventory; then closing inventory equals $1,000.

We can now solve for purchases:

Opening Inventory + Purchases = COGS + Closing Inventory

$500 + ? = $12,000 + $1,000

Therefore, purchases equal $12,500.

Reported turnover = COGS/Average Inventory = $12,000/$750 = 16.

Under the LIFO method:

Since inventory in units does not change:

Closing Inventory = Opening Inventory = $500

Therefore, Cost of Goods Sold = Purchases = $12,500

Reported turnover = COGS/Average Inventory = $12,500/$500 = 25.

Under the FIFO method:

First, note that under the weighted average method, closing inventory is greater than opening inventory. As cost changes were only in one direction, they must have gone up during the year. Therefore, use of FIFO must result in higher net income (lower COGS) and higher income taxes. Since the cash flow difference is $400 (all attributable to taxes), the income/COGS difference must be $1000. Therefore, $COGS_{FIFO}$ is $11,500 and Closing Inventory is $1,500.

Reported turnover = COGS/Average Inventory = $11,500/$1,000 = 11.5.

The completed table is:

	FIFO	Weighted Average	LIFO
Opening inventory	$ 500	$ 500	$ 500
Purchases	12,500	12,500	12,500
Cost of goods sold	11,500	12,000	12,500
Closing inventory	1,500	1,000	500
Inventory turnover (reported)	11.5X	16.0X	25.0X
Inventory turnover (actual)	12.0X	12.0X	12.0X

b. Reported turnover under the FIFO method most closely approximates the actual physical turnover whereas LIFO is farthest away. The preferred (current cost) turnover ratio (LIFO COGS/Average FIFO inventory) $12,500/1,000 = 12.5 also approximates the physical turnover.

c. The choice of method affects reported income, income taxes paid, and (therefore) the change in cash. The LIFO method reports the lowest net income but highest cash flow from operations (because of lower tax payments). Neither cash for investment nor cash for financing are affected. Thus LIFO reports the highest net cash flow. The FIFO method reports the lower cash from operations and, therefore, the lowest net cash flow. The average cost method is halfway between the other two methods.

6. a. The first step is to obtain FIFO cost-of-goods-sold:

Pretax income = sales - COGS - other expenses

$5,000 = $25,000 - COGS - $12,000

Solving: COGS = $8,000

Purchases are equal to COGS + Closing Inventory

= $8,000 + $10,000 = $18,000.

The key to this problem is to distinguish between the flow of units and the flow of costs. Purchases are independent of the accounting method used.

Since half the units were sold, half remain in inventory. Under LIFO, therefore, the cost allocations to inventory and COGS are the reverse of those allocated under FIFO. That is, under LIFO, COGS = $10,000 and Closing Inventory = $8,000.

Under the weighted average method, as total purchases equal $18,000, the

allocation between COGS and closing inventory will be equal: COGS = Closing Inventory = $9,000.

Recalling that pretax CFO depends on purchases, not COGS, we can now fill in the rest of the table.

	FIFO	Weighted Average	LIFO
Sales	$25,000	$25,000	$25,000
Cost of goods sold	8,000	9,000	10,000
Other expenses	12,000	12,000	12,000
Pretax income	5,000	4,000	3,000
Tax expense	2,000	1,600	1,200
Net income	3,000	2,400	1,800
Retained earnings	3,000	2,400	1,800
Cash from operations1	(7,000)	(6,600)	(6,200)
Cash balance2	3,000	3,400	3,800
Closing inventory	10,000	9,000	8,000
Purchases	18,000	18,000	18,000

1 Cash from operations = Sales - Other expenses - Purchases - Tax expense.

2 Cash balance = $10,000 + Cash from operations

b. M & J Company

Balance Sheet, December 31, 20X0

	FIFO	Weighted Average	LIFO
Cash	$ 3,000	$ 3,400	$ 3,800
Inventory	10,000	9,000	8,000
Total assets	$ 13,000	$ 12,400	$ 11,800
Common stock	$ 10,000	$ 10,000	$ 10,000
Retained earnings	3,000	2,400	1,800
Total equities	$ 13,000	$ 12,400	$ 11,800

c. The advantages of LIFO are that it results in the highest cash flow (by reducing income taxes) and it best measures net income by matching the cost of sales with most recent costs to replace inventory sold. The disadvantage of LIFO is that inventory on the balance sheet is understated.

The advantage of FIFO is that inventory is measured at most recent costs. Its disadvantages are the reduced cash flow and overstatement of reported income.

Average cost has the disadvantage of misreporting both the balance sheet inventory and net income. Income taxes are higher than under the LIFO method (but lower than under FIFO). The "advantage" of average cost is that it is "less wrong" than LIFO on the balance sheet and "less wrong" than FIFO on the income statement.

7. a. The number of units in inventory at December 31, 20X2 = 475 (100 + 500 - 125). Beginning inventory plus fourth quarter purchases equal $25,000 ($4,400 + $8,600 + $12,000). How that amount is allocated between ending inventory (EI) and cost-of-goods-sold (COGS) depends on the inventory method.

(i)	FIFO EI equals:	175 units @ $43	$ 7,525	
		300 units @ $40	12,000	
	Total EI	475 units	$19,525	
(ii)	LIFO EI equals:	100 units @ $44	$ 4,400	
		200 units @ $43	8,600	
		175 units @ $40	7,000	
	Total EI	475 units		$20,000

b. Cost of goods sold equals beginning inventory plus purchases less ending inventory:

FIFO: $25,000 - $19,525 = $5,475

LIFO: $25,000 - $20,000 = $5,000

Therefore, FIFO pretax income is $475 lower and income taxes are lower by $190 (40% of $475).

c. As the market price is now $40, the lower of cost or market (LOCOM) rule applies, and inventory with a cost exceeding $19,000 ($40 x 475) must be written down to that amount.

(i) FIFO: Inventory must be written down by $525, increasing COGS,

decreasing pretax income and income taxes.

(ii) LIFO: Inventory must be written down by $1,000, increasing COGS. But as LOCOM writedowns are not permitted for tax purposes when LIFO is used, income taxes are not affected by the writedown.

10. a. The LIFO Reserve increased by $4,000. If the company used FIFO, its pretax income would be $4,000 higher. After-tax income would be higher by.65 x $4,000 = $2,600.

b. Inventory turnover is COGS/average inventory:

LIFO $3,800,000/[.5($748,000 + $696,800)] = 5.26X

FIFO $3,796,000/[.5($794,000 + $746,800)] = 4.93X

c. Since the firm's ROE is 4.6% and net income is $340,000, then average equity = $340,000/.046 = $7,391,304

If the company used FIFO, equity would be higher by the LIFO reserve amount adjusted for taxes. The average LIFO reserve is $48,000. Therefore, average equity should be higher by $31,200 (.65 x $48,000) after tax.

FIFO average equity = $7,391,304 + $31,200 = $7,422,504

ROEFIFO = $342,600/$7,422,504 = 4.62%

The adjustment of ROE is insignificant in this case because the increase in the numerator (income) and denominator (equity) are proportionate.

d. There are two reasons to make adjustments for accounting methods:

To more accurately measure the firm's operations

To facilitate comparisons of different firms on the same basis

For inventory turnover, the adjustment results in a more accurate measure of performance. However, the main purpose of the LIFO to FIFO adjustment is to enable the analyst to compare Zeta to other firms that use FIFO.

e. The current cost method (inventory and equity at FIFO, COGS and net income at LIFO) should be used for both inventory turnover and ROE. For inventory turnover, this method better approximates the actual (physical) turnover. The argument for ROE is that FIFO equity better reflects the Company's current value, while LIFO income reflects the current operating profit earned on that equity. For Zeta, these adjustments offset. In some cases, however, the current cost method ratios are quite different.

11. a.

LIFO	1998	1999	2000
Sales	$ 8,413 a	$ 9,889	$ 14,062
Cost of sales	5,646	7,365	10,819
Gross profit	$ 2,767	$ 2,524	$ 3,243
Gross profit %	32.9%	25.5%	23.1%

b. As calculated below, price levels were very volatile over the 1997 - 2000 period. Oil prices fell by 33% in 1998, followed by a sharp increase of almost 125% in 1999. The increase continued into 2000, but at a more moderate level of 10%

	1997	1998	1999	2000
		(See Exhibit 6-3)		
LIFO inventory	$ 364	$ 403	$ 321	$ 381
LIFO reserve	492	205	763	873
FIFO inventory	$ 856	$ 608	$1,084	$1,254
Change in LIFO reserve		(287)	558	110
Price level change*		-33.5%	123.5%	10.1%

* For 1998 and 2000 estimated as:

change in LIFO reserve/opening FIFO inventory

For 1999, the above calculation was adjusted for the decline in inventory (see text P. 205-206)

c. FIFO cost of sales is calculated by subtracting the change in the LIFO reserve (part b) from LIFO cost of sales

FIFO	1998	1999	2000
Sales	$ 8,413	$ 9,889	$ 14,062
Cost of sales	5,933	6,807	10,709
Gross profit	$ 2,480	$ 3,082	$ 3,353
Gross profit %	29.5%	31.2%	23.8%

The gross profit margin percentages calculated in part a more accurately reflects Sunoco's real profitability as by using LIFO (i.e. current cost) for cost of sales, inventory-holding gains (losses) are removed from gross profit.

d. Sunoco's gross profit decreased in 1999-2000 as prices increased. This indicates that Sunoco is not able to "pass on" price increases immediately or in full to customers. Gross profit was highest (1998) when price levels fell, consistent with prices not being decreased as quickly as costs fell.

e.

	LIFO	FIFO	Current cost
Cost of sales	$10,819	$10,709	$10,819
average inventory	$351	$1,169	$1,169
2000 = turnover	= 30.8	= 9.2	= 9.3
1999 See text P. 209	20.3	8.0	8.7
1998 See text P. 209	14.7	8.1	7.7

Turnover on a LIFO basis is clearly overstated and continues to climb as price levels increase. The FIFO and current cost based turnover calculations are better measures and paint a similar picture – turnover increased in 2000 from 1998-1999 levels – number of days inventory is now (just under) 40 days

12. a.

LIFO Basis	1997	1998	1999
COGS		$ 27,444	$ 27,212
Inventory		4,816	5,069
Average inventory		4,930	4,943
Inventory turnover	$ 5,044	5.57 X	5.51 X
Number of days		65.6	66.3

In adjusting inventories to a FIFO basis one can calculate turnover on a

FIFO basis by adjusting COGS to FIFO as well, or

Current cost basis by leaving COGS on a LIFO basis.

The differences are often minimal (see below)

	1997	1998	1999
LIFO reserve	$ 713	$ 679	$ 595
FIFO Basis			
COGS (FIFO)1		$ 27,478	$ 27,296
Inventory (FIFO)2		5,495	5,664
Average inventory		5,626	5,580
Inventory turnover	$ 5,757	4.88 X	4.89 X
Number of days		74.7	74.6
Current Cost Basis			
COGS (LIFO)		$ 27,444	$ 27,212
Inventory (FIFO)2		5,495	5,664
Average inventory		5,626	5,580
Inventory turnover	$ 5,757	4.88 X	4.88 X
Number of days		74.8	74.8

1 COGS (LIFO) less change in LIFO reserve.

2 Inventory (LIFO) plus LIFO reserve

The FIFO-based measure(s) of turnover are better as they more closely measure the actual physical turnover. The LIFO-based measure overstates turnover, as there is a mismatch of costs with current costs in the numerator and historical costs in the denominator. Thus, the LIFO-based turnover measure is upwardly biased due to price increases.

The LIFO adjustment is the change in the LIFO reserve which, when added to FIFO COGS, yields LIFO COGS. (Like most companies, Sears keeps track of its inventories on a day-to-day basis using FIFO. At year-end they adjust the FIFO amounts to arrive at the LIFO amounts reported in their financial statements).

Based on the balance sheet data, the adjustments are

1998: = ($679 - $713) = ($ 34) and

1999: = ($595 - $679) = ($ 84)

The $34 credit reported by Sears in 1998 is identical to that calculated above. For 1999, there is a discrepancy of $11 million as Sears reported a $73 million credit and our calculations yield an $84 million credit. The discrepancy could be due to a divestiture – Sears may have sold a subsidiary or division, thus removing its inventory and LIFO reserve from its books.

13. a. Inventory turnover = Cost of sales/Average inventory =

$2,512 = 8.63

.5 x (249 +333)

Gross profit margin = ($3,663-$2,512)/$3,663 = 31.4%

ROE = Net income / Average equity =

$255 = 11.3%

.5 x (2,171 + 2,333)

b. FIFO Cost of sales

= $2,512 – change in LIFO reserve

= $2,512 – [($469 – $333)– ($368 - $249)])

= $2,495

Inventory turnover = Cost of sales/Average inventory =

$2,495 = 5.96

.5 x (368 +469)

Gross profit margin = ($3,663 - $2,495)/$3,663 = 31.8%

The effect on net income for the year would be

$17 x (1 - tax rate) = $17 (0.65) = $11, therefore

FIFO net income would be $255 + $11 = $266

The adjusted equity equals the reported equity plus the LIFO reserve x (1 – tax rate)

1999 adjustment: $119 x 65% = $77, therefore

Equity = $2,171 + $77 = $2,248

2000 adjustment: $136 x 65% = $88

Equity = $2,333 + $88 = $2,421

ROE = Net income / Average equity = $266 = 11.4%

.5 x ($2,248 + $2,421)

c. LIFO artificially inflates the inventory turnover ratio as the denominator is depressed. The gross margin is slightly lower using LIFO as COGS is higher. ROE is little changed as both the numerator and denominator are lower using LIFO.

d. The FIFO measure (part b) is a more useful measure of the turnover ratio as it removes the inflation effect. On the other hand LIFO COGS (part a) is a more useful measure than FIFO COGS as it reflects current costs. For ROE, the ideal would be to have LIFO income in the numerator and FIFO equity in the denominator, as both would measure current costs; the analyst should use neither the "pure" FIFO nor the LIFO ROE measure.

14. a. First, calculate the change in the LIFO reserve:

Total inventories	1999	2000	Change
Current cost	$ 368	$ 469	
Carrying value	(249)	(333)	
LIFO reserve	$ 119	$ 136	$ 17

The rate of price change equals the year 2000 change in the LIFO reserve compared with current cost LIFO inventories at the end of 1999:

LIFO inventories	1999
Carrying value	$ 157
LIFO reserve	119
Current cost	$ 276

The year 2000 rate of price change equals $17/$276 = 6.2%

Opening FIFO Inventory = Total inventories – LIFO inventories = $249 - $157 = $92 million

Adjustment to COGS = $92 x 6.2% = $6 million

Adjusted COGS = $2,512 + $6 = $2,518

Adjusted gross profit= $3,663 – $2,518 = $1,145

Adjusted net income= $255 - $6(.65) = 251

It provides a current cost measure of income for all of the company's sales

The assumption is reasonable if the FIFO inventories are similar to those carried on LIFO but are located in jurisdictions where LIFO is not permitted or there are other reasons for not using LIFO. On the other hand, the reason the company carries these inventories on a FIFO basis may be that they face a lower inflation rate.

15. a. Pulp, Paper increased by (185.1/177.0 – 1)= 4.6%

Chemical & Allied increased by (151.9/147.0 – 1) = 3.3%

For Westvaco, therefore, the rate should be

(.9 x 4.6%) + (.1 x 3.3%) = 4.5%

Westvaco's inventory disclosures (see Problem 14a.) suggest a slightly higher estimate of 6.2%.

c. The mostly likely explanation for the different estimates is that Westvaco's product mix differs from that used to compute the Pulp, Paper and Allied Products Index. That index may, for example, include products that Westvaco does not produce, whose prices rose less rapidly than the prices of those produced by Westvaco.

The lesson here is that, when commodity prices are used to estimate the effect of price changes on company inventories, care must be taken to ensure that product mixes between the chosen index and inventories are similar.

16. a. Inventory turnover

= Cost-of-goods (and services) sold/average inventory

	(i) FIFO		(ii) LIFO	
	1999	2000	1999	2000
Cost of goods*	$ 34,638	$ 39,394	$ 34,554	$ 39,312
Average inventory	6,521	7,358	5,552	6,472
Turnover	5.31	5.35	6.22	6.07
Cost of goods and services sold	$ 46,042	$ 51,905	$ 45,958	$ 51,823
Average inventory	6,521	7,358	5,552	6,472
Turnover	7.06	7.05	8.28	8.01

*Note that COGS has been adjusted for the FIFO calculation to reflect the change in the LIFO reserve as calculated below.

	1998	1999	2000
Inventory FIFO	$6,316	$6,725	$7,991
Inventory LIFO	5,305	5,798	7,146
LIFO reserve	$1,011	$ 927	$ 845
Change in LIFO reserve		(84)	(82)

b. When sales is used instead of cost-of-goods-sold:

	(i) FIFO		(ii) LIFO	
	1999	2000	1999	2000
Sales of goods	$ 47,785	$ 54,828	$ 47,785	$ 54,828
Average inventory	6,521	7,358	5,552	6,472
Turnover	7.33	7.45	8.61	8.47
Sales of goods and services sold	$ 64,068	$ 72,954	$ 64,068	$ 72,954
Average inventory	6,521	7,358	5,552	6,472
Turnover	9.83	9.91	11.54	11.27

None of these computations match those reported by management. Our understanding (from prior year conversations with GE's management) is that GE uses sales and FIFO inventories to calculate turnover. Those ratios [b(i) above] have the right trend but are almost exactly 1 turn higher than our computed ratios.

d. The preferred measure of inventory turnover uses the current cost method:

COGS (LIFO)/Average inventory (FIFO)

As the turnover ratio is intended to measure the relationship between goods sold during the period and the stock of goods held for sale, COGS (without cost of services) should be the numerator. Using sales in the numerator inflates the turnover ratio as sales always exceed COGS. In addition, when sales is the numerator, the ratio is affected when COGS fluctuates relative to sales.

COGS should be at LIFO to measure it at current cost.

FIFO inventory should be the denominator as LIFO inventory understates the inventory on hand. As discussed in the chapter, using LIFO inventory to compute turnover results in a ratio that is too high and that systematically increases over time.

The preferred calculations are:

	1999	2000
Cost of goods sold at LIFO	$ 34,554	$ 39,312
Average inventories at FtIFO	6,521	7,358
Turnover ratio	5.30	5.34

Under any measure, GE's turnover ratio remained relatively stable over the 1999-2000 period. Management's chosen method shows a higher turnover ratio than the preferred method. Comparisons with other firms are misleading when turnover ratios are computed differently.

The point of this problem is that ratios reported by management cannot be used blindly (especially for comparisons with other firms). The analyst must determine how management calculates its ratios and ensure that those calculations accord with calculations made by other firms and, most important, by the analyst.

17. a. January 1, 20X3 inventory = $2,700,000 ($2,000,000 + $700,000).

b. To maintain its inventory balance at $2,700,000, Jofen would have had to increase its purchases by $1,000,000 ($700,000 + $300,000); $300,000 is the difference between the LIFO and FIFO inventory cost. The choice of inventory method does not affect purchases, which reflect actual prices paid.

c. Ignoring taxes and any change in accounts payable, reported cash flow from operations increased by $1,000,000 due to lower purchases.

d. COGS should be increased by $300,000 to exclude the effect of the LIFO liquidation.

e. The LIFO liquidation is likely not a recurring event. Excluding that income makes net income more useful for evaluating operating performance (net income and cash from operations) and forecasting future performance.

18. a. The LIFO adjustment refers to the change in the LIFO reserve (or as Noland calls it 'Reduction to LIFO')

1997 1998 1999

LIFO Reserve
$32,495 $32,876
$34,267

Change in LIFO reserve381 1,391

b. COGSFIFO = COGSLIFO – change in LIFO reserve

For 1998: $372,033 – $ 381 = $371,652

For 1999: 385,892 – 1,391 = 384,501

c. Income would decline if prices in previous years were higher than current prices and the higher priced layer was liquidated.

d. (i) 1998: COGS = $372,033 – $150 = $371,883

1999: COGS = 385,892 + 47 = 385,939

(ii) For FIFO, COGS is the same as in part b – "liquidations" do not affect FIFO COGS

e. The most appropriate measure is the calculation computed in part d(i): LIFO COGS after eliminating effects of liquidation. That measure of COGS is closest to replacement cost.

f. By adding the LIFO reserve to equity; i.e. add $32,876,000 to 1998 equity and $34,267,000 to 1999 equity. Depending on the purpose of analysis, it may be appropriate to tax-adjust these values i.e. add [$32,876,000 x (1-tax rate)] to 1998 equity and [$34,267,000 x (1–tax rate)] to 1999 equity.

19. a. The company wrote down the carrying values of the inventories to market value. The write-downs of $36 and $18 million in 1997 and 1998 respectively were charged to income.

b. There may have been market value adjustments (write-downs) prior to 1997 that were reversed in 1999 in addition to those of 1997-1998.

c. Income would decline if prices in previous years were higher than current prices and the higher priced layer was liquidated.

d. The market value and liquidation adjustments do not relate to current year COGS and therefore should be excluded:

	1998	1999	Growth rate
Market value	$ (18)	$ 71	
Liquidation	(4)	41	
Total effect	$ (22)	$ 112	
Reported net income	$ 193	$ 390	102%
Less: total effect	22	(112)	

Adjusted net income	$ 215	$ 278	29%

Before adjustment the growth rate of net income is overstated at 102%. After adjustment, the actual growth rate is 29%, respectable but considerably below the reported growth rate.

20. a. The cost of inventory may have declined due to deflation.

b. (1)They might believe that the price decrease is temporary and in the future prices will increase again.

(2) Since the LIFO reserve is large, a switch to FIFO would require a large tax expense (equal to tax rate times the LIFO reserve) immediately. Thus, even if they felt that prices would continue to decrease in the future, they are still better off paying the higher taxes slowly over time (as the LIFO reserve declines) rather than paying the full amount immediately.

21.

	1997	1998	1999
a. Sales	$ 515,728	$ 539,413	$ 572,696
Gross margin	187,556	190,826	210,588
Gross margin %	36.4%	35.4%	36.8%
b. LIFO liquidation	$ 3,379	$ 1,733	none
Pretax liquidation*	5,198	2,666	
Adjusted			
Gross margin	$ 182,358	$ 188,160	$ 210,588
Gross margin %	35.4%	34.9%	36.8%

* Equals LIFO liquidation (net of tax)/.65

c. The adjusted gross margin percentage is more indicative of the longer-term trend of the company. By removing the effects of the LIFO liquidation(s), COGS and subsequently gross margin are more reflective of current cost income. Removing the effect of the liquidation shows that gross margins improved significantly from 1997-1998 to 1999.

22. The last sentence in the statement is patently absurd. The accounting method for inventory should have nothing to do with a company's pricing strategy. Pricing should be based on current market conditions. Companies that ignore the cost of replacing inventory when setting prices will suffer from poor cash flows and, in some cases, will fail.

23. a. For service companies, inventory is an insignificant component of assets and COGS an insignificant cost. The main inputs of service companies are capacity and people. Thus inventory turnover is not a useful measure for such companies.

b. Capacity utilization is an important measure of operating efficiency for firms with fixed capacity. The fixed cost of such capacity means that utilization is an important determinant of profitability. An airline seat, rental car, or hospital bed that goes unused generates no revenue; the variable cost saved may be very low. This phenomenon explains why airlines sell discount tickets; such sales are profitable as long as the marginal revenue exceeds the variable cost.

It is also important to measure costs in relation to either capacity or utilization. As revenues are subject to competitive and regulatory constraints, lower costs are important to profitability. Thus an airline's costs relative to available seat-miles (or to passenger revenue miles) measures the efficiency of its operations. For a car rental company, cost per available car would be a similar measure. For a hospital the analogous metric would be cost per available bed.

24. Contracts can provide strong incentives that affect the choice of inventory method. However different contracts may provide incentives for different choices. The following discussion assumes rising prices.

The management compensation plan provides a mixed incentive. Use of LIFO reduces income but increases cash from operations. Assuming a tax rate t, and a LIFO effect L, net income decreases by (1-t)L while cash from operations increases by tL. The net effect (2t-1)L is positive only at tax rates above 50%. Thus management contracts argue against use of LIFO.

Bond covenants also argue against LIFO. Working capital is reduced by the LIFO reserve less taxes saved. The annual amount is (t-1)L which is always negative. Retained earnings are also lower under LIFO.

Union employee profit sharing payments are lower under LIFO, assuming that profits would exceed the minimum level. This would seem to argue for LIFO, to reduce compensation paid.

However, there are also second and third order effects that must be considered. Lower profit sharing payments, for example, increase net income (and cash from operations), increasing management compensation and easing the effect of bond covenants. These effects require complex calculations and are highly firm-specific.

Some effects are non-quantitative. Lower profit sharing payments may result in

higher wage demands from workers. For management, use of FIFO may raise questions about why they failed to obtain tax savings by using LIFO.

Thus, while we can identify many of the factors that motivate the choice of inventory method, the controller's choice will depend on how these factors affect Sechne; there is no simple answer.