

Homework Assignment #2 Hershey Foods Corporation SOLUTION

In formulating your answers to the questions below, you may assume the following for Hershey:

1. There were no FCTAs (Foreign Currency Translation Adjustments) for 2001, related to accounts receivables or inventories.
2. The provision for uncollectibles (bad debt expense) is included in Net Sales. The provision was \$8,450 (thousand) in 2001 and \$8,531 (thousand) in 2000.
3. In its Balance Sheet for December 31, 1999, Hershey reported "Accounts receivable - trade" of \$352,750 (thousand) net of allowances of \$16,941 (thousand).
4. All asset impairment charges were recorded at the end of fiscal 2001 (at the end of the fourth quarter).
5. Hershey's marginal rate of income tax (federal, state and local) for 2001 was 38.5%.

Accounts Receivable

1. What is the percentage of total accounts receivable that Hershey estimates will be uncollectible at the end of 2001 and 2000?

	<u>Allowance for Uncollectibles</u> <u>Accounts Receivables (Gross)</u>			
2001	<u>16,000</u> 361,762 + 16,000	=	4.2%	See Accounts Receivable Note for the amount of the Allowance
2000	<u>16,000</u> 379,680 + 16,000	=	4.0%	

2. Give the entries that Hershey recorded in 2000, to record estimated uncollectibles arising in the year and to record accounts receivable written-off during the year.

To record estimated uncollectibles for 2000

Provision for Uncollectibles (Expenses)	8,531	
Allowance for Uncollectibles		8,531 See assumption 2

Hershey does not report the amount of accounts receivables written-off during 2000. Therefore, in order to make the entry, you must first determine what that amount is:

Allowance for Uncollectible Accounts

		16,941 Begin Bal. – 12/31/99
		8,531 Provision for Uncollectibles
Net Write-offs	9,472	
		16,000 End. Bal. – 12/31/2000

See Notes

Thus, entry to record accounts written-off in 2000

Allowance for Uncollectibles	9,472	
Accounts Receivable		9,472

3. What was the amount of cash collected from customers for 2001?

We can determine the amount of cash collected from customers by referring to the sales revenue reported and the information contained in the cash flow statement:

Net Sales Revenue	Gross Revenue – Provision	4,557,241
Add: Decrease in Net A/R See SCF – Operating	Collections – Gross Revenue + Provision	<u>17,954</u>
	Collections	4,575,195

A word of caution here:

To determine the amount of cash collected from customers, you should not use, automatically, the change in the accounts/trade receivables determined from the Balance Sheet. Remember that the (total or net) change in the Accounts Receivable obtained from using the balance sheet data may be the result of BOTH operating activities (credit sales and collections on account) AND investing activities (accounts receivables acquired as a part of a business acquisition or disposed of as a part of a business disposal).

In the operating activities section of the SCF, the firm reports the change in A/R resulting from operating activities, only. However, noting that the balance sheet change in net A/R is the same amount as the change reported in the operating section of the SCF, we can conclude that no A/R were acquired or disposed of through investing activities. In that case, we could also determine the amount of cash collected by analyzing the accounts receivable account:

Accounts/Trade Receivables, net

Begin Bal. – 12/31/00	379,680	
Net Sales Revenue (Sales – Provision)	4,557,241	
		4,575,195 Collections
End. Bal. – 12/31/01	361,726	

Or

Accounts/Trade Receivables, gross

Begin Bal. (379,680 + 16,000)	395,680	
Gross Sales (4,557,241 + 8,450)	4,565,691	8,450 Net Write-offs (= Provision because Allowance unchanged)
		4,575,195 Collections
End. Bal. (361,726 + 16,000)	377,726	

4. Compute Hershey's accounts receivable turnover for 2001 and for 2000.

	<u>A/R</u> <u>+turnover</u>	<u>Net Sales Revenue</u> <u>Average Net A/R</u>	
For 2001	$\frac{4,557,241}{(361,726 + 379,680)/2}$	12.29 times	(29.7 days)
For 2000	$\frac{4,220,976}{(379,680 + 352,750)/2}$	11.53 times	(31.7 days)

5. Compute Wrigley's accounts receivable turnover for 2001. How does Wrigley's accounts receivable management compare with Hershey's?

Assuming that Wrigley, like Hershey, includes the Provision for Uncollectibles in the Net Sales Revenue, then

A/R turnover for 2001	$\frac{2,429,646}{(239,885 + 191,570)/2}$	11.26 times	(32.4 days)
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Wrigley's accounts receivable turnover for 2001 is slightly inferior to Hershey's – 32.4 days vs. 29.7 days. But the difference does not appear to be substantial.

It would be useful to know what Wrigley's turnover was in 2000. Has Wrigley's turnover improved as Hershey's has or not?

6. In the Notes, Hershey indicated that Wal-Mart makes up 18% of its net sales and 15% of its accounts receivables. Discuss the effects that reliance on a large customer, such as Wal-Mart, might have on Hershey's profitability.

Reliance on one or a few small customers for a substantial part of a firm's business may expose the firm to substantial risk.

If Wal-Mart were to decide replace Hershey, as one of its suppliers, or if it were to fail, Hershey's profits would decline substantially as a result of the lost revenues (18% of its net sales). In addition, Wal-Mart's position, gives it substantial leverage in contract negotiations, raising the risk that Wal-Mart might squeeze Hershey's margins.

If Wal-Mart were to get into financial difficulty and, as a result, delay payments to its suppliers on account, Hershey, as one of those suppliers, might be required to replace those cash flows with borrowed funds, incurring interest costs and reducing profits.

If Wal-Mart were to fail, Hershey would suffer a substantial loss writing off the receivable (as much as 15% of its outstanding A/R). However, the risk of this happening is probably very low.

Inventories

1. What cost flow assumptions does Hershey use?

In the "Inventories" note, Hershey disclosed that it values the majority of its inventories using LIFO and the remainder using FIFO.

2. On December 31, 2001, what is the reported value of Hershey's inventories? What would the value have been if Hershey had used FIFO for all inventories?

Reported value (cost)	512,134 thousand	See balance sheet or Notes
Value (cost) if Hershey used FIFO	565,627 thousand	See Notes

3. On December 31, 2001, what percentage of Hershey's total inventories is valued using LIFO?

<u>Cost of LIFO inventories</u>	<u>351.1 million</u>	=	<u>68.6%</u>
Reported cost of all inventories (LIFO and FIFO)	512.1 million		

Note: Hershey reported that its inventories were comprised of two components – those inventories valued using LIFO and those using FIFO. With the information Hershey provided we can determine each of those components.

$$\begin{array}{rcl}
 \text{Total Reported Inventories} & = & \text{LIFO} & + & \text{FIFO} \\
 & & \text{component} & & \text{component} \\
 & & \text{(at LIFO} & & \text{(at FIFO cost)} \\
 & & \text{cost)} & & \\
 512.1 \text{ million} & = & 351.1 \text{ million} & + & 161.0 \text{ million}
 \end{array}$$

Now, we can work our way back up Hershey’s inventory note – going from the reported value of the inventories to the FIFO (current) cost:

	LIFO component	FIFO component
<i>As reported</i>	<i>351.1 million</i>	<i>161.0 million</i>
<i>LIFO reserve</i>	<u><i>53.5 million</i></u>	<u><i>0</i></u>
FIFO (Current) cost	404.6 million	161.0 million

4. In the MD&A, Hershey lists several factors which both increased and decreased its gross margin in 2001.

a) On average, did inventory costs rise or fall during 2001? Cite specific information contained in the annual report to support your answer.

The easiest way to determine whether costs have risen or fallen is to refer to the change in the LIFO reserve (“Adjustment to LIFO”). If it increases, then costs must have increased. If it decreases then costs must have declined, unless there was a LIFO liquidation.

In this case, the reserve increased indicating that costs increased. (An increase in the reserve always indicates an increase in costs, because the effect of a LIFO liquidation is always in the opposite direction – to decrease the reserve.)

b) Using the information contained in the Annual Report, estimate the percentage change (increase or decrease) in average inventory costs experienced by Hershey in 2001.

The rate of cost change (inflation/deflation) can be estimated using the ratio of

$$\text{Therefore, } \% \text{ rate of cost inflation} = \frac{\text{Change in LIFO reserve excluding the affect of LIFO liquidation}}{\text{FIFO value of LIFO inventories at the beginning of the period}} = \frac{53,493 - 45,100}{(456,700 + 45,100)} = 1.7\%$$

In this case, Hershey reported that during 2001, raw materials inventories were written-off. However, it did not report that the write-off had any affect on net income (or cost of goods sold). Thus, either the inventories reduced were FIFO inventories or, their FIFO and LIFO costs were the same. Therefore, we can conclude that there was no LIFO liquidation effect included in the change in the LIFO reserve.

5. Estimate the amount of income taxes that Hershey saved (or paid) for 2001, because it used the LIFO inventory method rather than FIFO.

The change in the LIFO reserve always corresponds to the difference between the LIFO and FIFO cost of goods sold and, therefore, to the difference between the LIFO and FIFO net income before taxes.

Since the reserve increased, we can conclude that the reported (LIFO-based) cost of goods sold (pre-tax income) was greater (less) than the corresponding FIFO amount. Therefore,

$$\begin{aligned} \text{Taxes saved for 2001} &= (53,493 - 45,100) \times 38.5\% \\ &= 8,393 \times 38.5\% &= 3,231 \end{aligned}$$

6 Using the information contained in the Annual Report, compute the following ratios for 2001:

a)

- i) Return on shareholders' equity (Net income / Shareholders' Equity)
- ii) Return on assets (Net income/ Average total assets)
- iii) Leverage (Total liabilities/Shareholders' equity)
- iv) Inventory turnover (COGS / Average inventory)

b) Assume that Hershey had used the FIFO method (rather than the LIFO) method, compute the ratios above.

	<i>Using Reported Amounts</i>	<i>"As if" FIFO</i>	
<u>Return on shareholders' equity</u>	$\frac{207,156}{(1,147,204 + 1,175,036)/2}$ <p>= 17.8%</p>	$\frac{207,156 + [8,393 \times (1 - .385)]}{\{[1,147,204 + 1,175,036] + [(53,493 + 45,100) \times (1 - .385)]\}/2}$ <p>= 17.8%</p>	<i>The fact that, in this case, these ratios are almost identical is purely coincidental.</i>
<u>Return on assets</u>	$\frac{207,156}{(3,247,430 + 3,447,764)/2}$ <p>= 6.2%</p>	$\frac{207,156 + (8,393 \times (1 - .385))}{[(3,247,430 + 53,493) + (3,447,764 + 45,100)]/2}$ <p>= 6.3%</p>	
<u>Leverage</u>	$\frac{2,100,256}{1,147,204}$ <p>= 1.74</p>	$\frac{2,100,256 + (53,493 \times 38.5\%)}{1,147,204 + (53,493 \times (1 - .385))}$ <p>= 1.80</p>	
<u>Inventory turnover</u>	$\frac{2,665,566}{(512,134 + 605,173)/2}$ <p>= 4.7 times = 77.6 days</p>	$\frac{2,665,566 - 8,393}{(565,627 + 650,273)/2}$ <p>= 4.4 times = 83.0 days</p>	

** To compute the "As if" FIFO leverage ratio, we have to make some assumption about the financing of the income taxes costs that would result from the additional "FIFO" income. The computation above reflects the additional tax as a long-term liability representing an implicit form of financing provided by the government through the tax code.

7. For Hershey, the impact on cost of goods sold resulting from the use of LIFO is not substantial. When would you expect the use of LIFO to have a significant effect?

The impact would be more substantial in periods where inventory costs are changing at a greater percentage rate or in a period when there was a substantial LIFO liquidation.

8. In the Statement of Cash Flows, Hershey indicated that, in 2001, it both acquired and disposed of businesses. What was the **net** effect of those transactions on Hershey's inventories?

We can determine the effect of acquisitions and/or dispositions on inventories by comparing the change in the inventories derived from the balance sheet with the change in the inventories reported in the operating activities section of the SCF.

Balance Sheet change = 512,134 – 605,173 = (93,039)

Change reported in SCF = (94,405)

But, we have to be a little careful that we don't jump to the wrong conclusion here. It appears from above that Hershey must have acquired some inventories as a result of a net investment in new businesses. i.e.

Decline due to operations (94,405)

Deduct: Net decline (Balance Sheet) 93,039

Increase due to net investments 1,366

However, in this case, something else is also going on. Recall that in the "Inventories" note Hershey reported that it wrote-off inventories of 130.5 million (130,500 thousand) as a part of its business realignment initiative and included that write-off in the "Business realignment and asset impairment cost" reported in its income statement.

Now, note that in the operating activities section of the cash flow statement, Hershey reports an adjustment for non-cash business realignment costs. That adjustment includes the inventory write-off. Taking this fact into account, we end up with:

Decline due to operations (94,405) as reported

Add: Decline due to write-off (130,500) included in bus. realignment

(224,905)

Deduct: Net decline (Balance Sheet) 93,039

Increase due to net investments 131,866

9. On December 31, 1999, Hershey reported "Inventories" of \$602,202 (thousand). Compute Hershey's inventory turnover ratio for 2000. Comparing the ratios for 2000 and for 2001, comment on the difference.

$$\text{Inventory turnover for 2000} = \frac{2,471,151}{(605,173 + 602,202)/2} = 4.0 \text{ times or } 89.2 \text{ days}$$

The inventory turnover has increased from 2000 to 2001, from 4.0 time to 4.7 times – a modest improvement.

However, recall that in 2001, Hershey reported that it wrote-off some of its inventories. Thus, inventory levels at the end of 2001 were lower, not because Hershey was making more efficient use of its inventories (to support sales) but because of the write-off. If we adjust the turnover ratio for 2001 to take this fact into account, the picture is a little different

$$\text{Inventory turnover for 2001 Adjusted for write-off} = \frac{2,665,566}{((512,134 + 130,500) + 605,173)/2} = 4.3 \text{ times or } 84.9 \text{ days}$$

In the adjusted ratio above, the ending balance of the inventories has been adjusted to include the inventory written-off at the end of the year.