

Further Study

(Complements of Google search: bookstore inventory turnover)

1. **Clothes for Men casuals has \$20 million net sales. Average inventory at retail is \$17 million. What is Clothes for Men’s inventory turnover?**

Inventory turnover = sales at retail/avg. inventory at retail = $\$20/17 = 1.18$

2. **What is inventory turnover of a pet shop chain with annual sales of \$20 million, average inventory at cost of \$6 million, and a gross margin of 40 percent?**

Inventory turnover = (sales at cost/avg. inventory at cost)(100 – Gross margin %)
 $20,000,000/6,000,000 = 3.3$ $100 - 40 = .60$
1.98 = 3.3 X .60

3. **What is the GMROI for each of the following merchandise categories in a bookstore? Which of these categories is most profitable for the bookstore? Should the bookstore eliminate the least profitable category?**

<i>Category</i>	<i>Textbooks</i>	<i>General Reading</i>	<i>Reference Books</i>	<i>Newspapers, Magazines</i>
Annual Sales	\$800,000	\$450,000	\$600,000	\$100,000
Average Inventory (at cost)	\$70,000	\$110,000	\$250,000	\$10,000
Gross Margin %	10%	25%	40%	12%
inventory turnover	10.29	3.07	1.44	8.8
GMROI	114.3%	102.27%	96%	120%

4. **What is the annual inventory turnover for a retailer with the following monthly sales levels?**

Month	Sales	BOM Inventory
January	\$14,000	\$40,000
February	13,000	38,000
March	13,000	39,000
April	17,000	41,000
May	16,000	40,000
June	14,000	38,500
July		40,000

The total sales for the first six months is \$87,000. The annualized sales is \$174,000 – two times the sum of the monthly sales over the first six months.

The best estimate of the average inventory over the first six months is the sum of the seven BOM inventory levels divided by 7 = \$39,500.

The inventory turnover is $\$174,000/39,500 = 4.4$

5. What are the retail and cost inventory values of Sound Music at the end of the month of October based on the following accounting information?

- a. Beginning-of-month (BOM) inventory worth \$200,000 at cost and \$300,000 at retail
- b. Purchases made during the month worth \$250,000 at cost and \$350,000 at retail.
- c. \$14,000 paid for freight charges.
- d. \$260,000 net sales of retail, with a cost of goods sold at \$180,000.
- e. \$10,000 total markdown.
- f. \$300 in employee discount.
- g. \$4,800 allowance for shrinkage.

	Inventory at Cost	Inventory at Retail
BOM Inventory	\$200,000	\$300,000
Purchases	+250,000	+350,000
Freight Charges	+ 14,000	
Total Goods Handled	464,000	650,000
Net Sales		260,000
Markdowns		10,000
Employee Discounts		300
Inventory Shrinkage		4,800
Total Reductions		275,100

$$\begin{aligned} \text{Cumulative markup} &= \frac{\text{Total retail} - \text{Total cost}}{\text{Total retail}} \\ &= \frac{650,000 - 464,000}{650,000} = 29\% \end{aligned}$$

$$\begin{aligned} \text{Cost Multiplier} &= (\$100\% - \text{Cumulative Markup \%}) = 71\% \\ \text{Ending book inventory at retail} &= \text{Total goods handled at retail} - \text{Total reductions} \\ \mathbf{\$375,000} &= \$650,000 - 275,000 \\ \text{Ending book inventory at cost} &= \text{The ending book inventory at retail X cost multiplier} \\ \mathbf{\$26,625,000} &= \$375,000 \times 71\% \end{aligned}$$

6. Crafts and Things had sales of \$102,000 during June. Its end-of-month (EOM) stock was \$300,000 and its BOM stock was \$270,000. What was its additions to stock during June.

$$\$270,000 - 102,000 = 168,000$$

$$\$300,000 - 168,000 = \mathbf{132,000}$$

7. The annual sales of Harry's Stereo chain was \$56,000,000. The average inventory at cost was \$40,000,000 and the gross margin was 43 percent. What were the chain's GMROI, inventory turnover, and average stock-to-sales ratio?

$$\text{GMROI} = (\$56,000,000/40,000,000) \times 43 = \mathbf{60.2}$$

$$\text{Inventory Turnover} = (\$56,000,000/40,000,000 = 1.4) (100 - 43 = 57) 1.4 \times .57 = \mathbf{.8}$$

$$\text{Average stock-to-sales ratio} = 12/.8 = \mathbf{15}$$

8. A tennis shop has developed the following merchandise plan:

Planned EOM stock	\$45,000
Projected BOM stock	\$35,000
Actual on order	
(what is on order for the month)	\$25,000
Plan monthly sales	\$10,000
Plan reductions for the month	\$ 2,000

What is the open-to-buy

Projected EOM stock	\$= 48,000
Projected BOM stock	\$35,000
+Actual on order (what is on order for the month)	+ 25,000
- Plan monthly sales	- 10,000
- Plan reductions for the month	- 2,000

Open-To-Buy = Planned EOM stock – Projected EOM stock

$$\mathbf{-\$3,000} = 45,000 - 48,000$$

We have overbought by \$3,000

9. Gifts, Etc., a small gift-and craft store, has the following plan for April:

Sales	\$ 35,000
BOM stock	\$100,000
EOM stock	\$ 97,500
Planned reductions	\$ 1,250
Planned gross margin	40%

What are the planned purchases for the store at retail and at cost?

$$\begin{aligned} \text{Additions to stock} &= \text{sales} + \text{reductions} + \text{EOM inventory} - \text{BOM inventory} \\ \$33,750 &= 35,000 + 1,250 + 97,500 - 100,000 \end{aligned}$$

10. Based on the following information from the merchandise budget plan for a women's accessory department in a specialty store, what is the open-to-buy as of April 1?

Planned monthly sales	\$124,000
BOM inventory	\$150,000
EOM inventory	\$160,000

April merchandise already received	\$ 90,000
April merchandise on order	\$ 36,000
Planned reductions	\$ 25,000

Projected EOM stock	\$127,000 =
Actual BOM stock	\$150,000
+Actual monthly additions to stock (what was actually received)	+ 90,000
+Actual on order (what is on order for the month)	+ 36,000
- Plan monthly sales	- 124,000
- Plan reductions for the month	- 25,000

Open-To-Buy = Planned EOM stock – Projected EOM stock

$$\mathbf{\$33,000} = 160,000 - 127,000$$

11. Forecast the sales for the next sales period for a retailer using exponential smoothing and the following information:

Old forecast	=100 units
Actual demand	=67 units
Alpha	=.08

$$\text{New forecast} = \text{Old forecast} + \alpha(\text{Actual demand} - \text{Old forecast})$$

$$97.36 = 100 + .08(67-100)$$

12. What is the order point, and how many units should be ordered if a food retailer has an item with a 10-day lead time, 3 day review time, and daily demand of 15 units? A total of 75 units are on hand and the retailer must take a safety stock of 50 units to maintain a 95 percent service level.

$$\text{Order point} = [(\text{Demand/day})(\text{Lead time} + \text{Review time})] + (\text{Back-up stock})$$

$$245 = [15 \times (10 + 3)] + 50$$