

MERCHANDISING

Developing a Merchandise Budget

- Forecasting Sales (Sales Planning)
- Planning Inventory Levels (Stock Planning)
- Estimating Reductions (Planning Reductions)
- Planning purchases

Forecasting Sales

- Measuring Past Trends
 - Assume sales will increase or decrease by the same amount as the preceding year (10% up or down)
 - Use a 3 year moving average (year 1 + year 2 + year 3 / 3; $(7+8+9)/3 = 8\%$)
 - Trend Extrapolation
 - project future sales based on trend in past sales (10% given above information)

Forecasting Sales (cont.)

- Adjusting for changes in the economic environment (unemployment, GNP, total retail sales, consumer confidence)
- Adjusting for changes in the marketing environment (eg. New competition, new advertising, parking improvements)

Planning Inventory Levels

- Stock Turnover - relationship between the sale of goods and the average inventory of goods (the number of times the average inventory turns over in a year)
 - Sales (in units, at retail, at cost) / Avg. Inventory (in units, at retail, at cost)
 - Stated seasonally, annually, quarterly, monthly, or weekly

Stockturn Example

Month		Inv. At Retail	Retail Sales
February	Physical Inv.	49,375	11,236
March	Book	51,332	14,374
April	Book	53,118	16,661
May	Book	54,636	17,777
June	Book	52,347	16,539
July	Book	50,131	10,322
August	Physical	48,359	

Stockturn Example (cont.)

Average Inventory = $359,298/7 = 51,328$

Seasonal Stockturn = Sales at Retail (86,909)/
Average Inventory at Retail (51,328) = 1.69

Annual Stockturn = $1.69 \times 2 = 3.38$

Stock to Sales Ratio

- Assumes you want to maintain a specified ratio of inventory to sales
- Helps you determine how much stock you want to have on hand each month
 - Ex. If you forecast sales of \$23,000 in June and your stock to sales ratio in June has historically been 2.2, you should purchase \$50,600 in inventory at retail ($\$23,000 \times 2.2$)*

Calculating Stock-to-Sales

Month	Sales	BOM Retail St.	Ratios
August	9,000	27,000	3.0
September	10,000	31,000	3.1
October	12,000	33,000	2.8
November	15,000	36,000	2.4
December	18,000	33,000	1.8
January	8,000	24,000	3.0
February		33,000	

To get planned stocks for the upcoming Fall season:

Month	Planned Sales	BOM Stock-Sales Ratio	Planned Retail BOM Stocks
August	9,500 X	3.0	= \$28,500
September	11,000 X	3.1	= \$34,100
October	12,500 X	2.8	= \$35,000
November	16,500 X	2.4	= \$38,400
December	18,500 X	1.8	= \$33,300
January	8,500 X	3.0	= \$25,500

Stock-to-Sales Ratio and Stockturn

- Given a desired stockturn for the year, you can determine your desired average stock-to-sales ratio for the year
- If your yearly stockturn is 4.6, your average stock-to-sales ratio for the year would be $12(\text{months})/\text{yearly stockturn} = 12/4.6 = 2.6$
- The higher your turnover, the lower your stock-to-sales ratio

Stock-to-Sales (cont.)

If turnover is:

3.0 $12/3.0 = 4.0$ Stock-to-Sales ratio

4.6 $12/4.6 = 2.6$ Stock-to-Sales ratio

6.0 $12/6.0 = 2.0$ Stock-to-Sales ratio

Weeks' Supply Method

- Planning sales on a weekly basis so your stock on hand is equal to several weeks anticipated sales
- Alternative to the Stock-to-Sales ratio method (*purchase for weeks rather than months*)
- How many weeks supply you will want on hand will depend on your seasonal stockturn

Weeks' Supply Method (cont.)

- If annual stockturn is 6, seasonal stockturn is $6/2 = 3$
- Average Inventory = 26 weeks (season)/ 3 (seasonal stockturn) = 8.7 weeks supply
- If you forecast sales for a season at \$65,000, the average sales per week would be $\$65,000 / 26 \text{ weeks} = \$2,500$
- To have 8.7 weeks supply of inventory, the retail value of the stock on hand would have to be $\$2,500 \times 8.7 = \$21,750$

Planning Reductions

- In order to have enough merchandise every month to support your sales forecast, you need to consider factors that reduce the inventory level: reductions
- Reductions include markdowns, employee discounts, and shrinkage
 - Ex. If a \$75 pair of sneakers is marked down to \$60, there is a \$15 markdown; this is a 20% markdown ($\$15/\75)

Open-to-Buy

- The amount you have left to spend for that month after accounting for orders already planned for that month's stock

Planned Purchases

- Purchase Commitments

Open-to-Buy

Open-to-Buy Example

Planned Purchases =

Planned EOM Stock (*what you want to have at the end of the month*)

+ **Planned Sales**

+ **Planned Reductions** (*markdowns, shortages, employee discounts*)

- **Planned BOM Stocks** (*what you think you will already have in stock from the previous month*)

Planned Purchases

Planned EOM Stock	+ 800,000
+ Planned Sales	+ 150,000
+ Planned Reductions	+ 20,000
- Planned BOM Stocks	- 650,000
Planned Purchases	320,000

Purchase Commitments

- Merchandise ordered which will be delivered that month
- Merchandise ordered that has already arrived

Open-to-Buy Example

If you planned to purchase \$20,000 worth of merchandise in March, have already received \$5,000 in merchandise, and have \$6,000 on order for delivery in March, what is your open-to-buy?

$$\$20,000 - 5,000 - 6,000 = \$9,000$$

Open-to-Buy (cont.)

If you return \$4,000 to a vendor in March, your open-to-buy increases by \$4,000
 $\$9,000 + 4,000 = \$13,000$ at retail

If your cost complement (*COGS/Sales Revenues*) is 50%, $13,000 \times .5 = \$6,500$ is what you can spend on merchandise

Areas of Negotiation

- Cost of Merchandise
- Discounts
- Dating of Discounts
- Transportation Charges

Types of Discounts

- Trade
 - *retailer performs functions for vendor*
- Quantity
- Seasonal (*for placing an order prior to the normal buying period*)
- Promotional Allowance - co-op money
- Cash Discounts (*paying for the order within a specified time period*)

DATING

- Cash Dating - least desirable
 - *cash with order or cash on delivery*
- Future Dating
 - EOM (end of the month)
 - *discount begins on the first day of following month*
 - ROG (receipt of goods)
 - *discount period begins when goods are received*
 - Date of Invoice - ordering date
 - *discount period begins on date of invoice*
 - Extra - most desirable (2/10-60 extra, n/90)

Transportation Charges

- FOB destination (free on board)
 - *seller pays for transporting goods and assumes responsibility for damage or loss (most desirable)*
- FOB origin (least desirable)
 - *retailer pays for transporting goods*

Economic Order Quantity (EOQ)

- With a *perpetual ordering system*, the EOQ is the quantity purchased when inventory reaches the order point (the minimal level of inventory the retailer should carry so they will not run out of stock before the next order arrives)
- EOQ accounts for the variable cost of ordering inventory and inventory carrying costs

EOQ (cont.)

- $EOQ = 2SO/IC$
 - O = variable cost per order placed
 - S = estimated annual unit sales
 - I = inventory carrying costs as a % of average inventory
 - C = unit cost of item
- Variable costs decrease with large orders while carrying costs increase

Order Point Model

- Demand per day X (lead time + review time) + safety stock
 - lead time is the length of time it takes to get a product on the sales floor once it is ordered
 - if demand per day = 20 units, lead time = 14 days, review time = 7 days, and safety stock = 50 units
 - Order point = $20 \times (14+7) + 50 = 470$

Open-to-Buy Problem

Given the following information, calculate open-to-buy for February:

\$100,000	BOM stock for February
\$30,000	February forecasted sales
\$7,000	forecasted reductions
\$110,000	EOM stock for February
\$10,000	merchandise on order for February