Section Ten

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El Deep Co. computes its break-even point strictly on the basis of cash expenditures related to fixed costs. Its total fixed costs are $3,250,000, but 5 percent of this value is represented by depreciation. Its contribution margin (price minus variable cost) for each unit is $4.5. How many units does the firm need to sell to reach the cash break-even point?

Solution:

El Deep Co.

Cash-related fixed costs = Total fixed costs – Depreciation

= $3,250,000 – 5% ($3,250,000)

= $3087500

$$BE = \frac{Fixed\ costs}{Contribution\ margin\ per\ unit}$$

$$= \frac{3087500}{4.5}$$

$$= 686111\ units$$

XYZ Company's income statement for 20X1 is as follows:

XYZ COMPANY Income Statement For the Year Ended December 31, 20X1	
Sales (20,000 tires at $30 each)	$600,000
Less: Variable costs (20,000 tires at $15)	300,000
Fixed costs	200,000
Earnings before interest and taxes (EBIT)	100,000
Interest expense	25,000
Earnings before taxes (EBT)	75,000
Income tax expense (30%)	22,500
Earnings after taxes (EAT)	$ 52,500

Given this income statement, compute the following:

a. Degree of operating leverage.
b. Degree of financial leverage.
c. Degree of combined leverage.
d. Break-even point in units.

Solution:

XYZ Company

Q = 10,000, P = \$30, VC = \$15, FC = \$200,000, I = \$25,000

A. DOL = $\frac{Q\ (P-VC)}{Q\ (P-VC)-FC} = \frac{20000\ (30-15)}{20000\ (30-15)-200000} = 3.00X$

B. DFL = $\frac{EBIT}{EBIT\ -I} = \frac{100000}{75000} = 1.33\ X$

C. DCL = $\frac{Q\ (P-VC)}{Q\ (P-VC)-FC\ -I} = \frac{20000\ (30-15)}{20000\ (30-15)-200000\ -25000} = 4\ X$

D. BE = $\frac{200000}{30-15} = 13333\ units$

A company sells 10,000 units of a product per year. The ordering cost is $100 per order, and the Carrying cost is $2 per unit per year. Calculate the Economic Order Quantity (EOQ).

Answer:

$$EOQ = \sqrt{\frac{2\,SO}{C}} = \sqrt{\frac{2 * 10000 * 100}{2}} = 1000\ units$$

A company sells 15,000 units of a product each year. The ordering cost is $150 per order, and the annual holding cost is $5 per unit. Calculate the Economic Order Quantity (EOQ).

Answer:

$$EOQ = \sqrt{\frac{2\,SO}{C}} = \sqrt{\frac{2 * 15000 * 150}{5}} = 949\ units$$

A retail store sells 200 units of a product per month. The lead time for restocking is 3 weeks. Calculate the reorder point.

Answer:

Reorder Point=Demand per day × Lead time in days

Monthly demand = 200 units

Demand per day =200/30 = 6.67 units/ day

Lead time = 3 weeks = 21 days

Reorder Point=6.67×21=140 units

Owen's Electronics has nine operating plants in seven Southwestern states. Sales for last year were $100 million, and the balance sheet at year-end is similar in percentage of sales to that of previous years (and this will continue in the future). All assets (including fixed assets) and current liabilities will vary directly with sales. The firm is working at full capacity.

Balance Sheet (in $ millions)			
Assets		**Liabilities and Stockholders' Equity**	
Cash	$ 7	Accounts payable	**$20**
Accounts receivable	25	Accrued wages	**7**
Inventory	28	Accrued taxes	**13**
Current assets	$60	Current liabilities	**$40**
Fixed assets	45	Notes payable	**15**
		Common stock	**20**
		Retained earnings	**30**
Total assets	**$105**	**Total liabilities and stockholders' equity**	**$105**

Owen’s has an after-tax profit margin of 10 percent and a dividend payout ratio of 45 percent.

If sales grow by 20 percent next year, determine how many dollars of new funds are needed to finance the growth.

Answer:

Owen’s Electronics

At Full Capacity

Spontaneous Assets = Current assets + Fixed assets

Spontaneous Liabilities = Acc Payable + Accrued Wages & Taxes

Required New Funds = $\frac{A}{S}(\Delta S) - \frac{L}{S}(\Delta S)$ **- PS_2(1-D)**

ΔS **= 20% * 100000000 = 20000000$**

Required New Funds = $\frac{105}{100}(20000000) - \frac{40}{100}(200000000)$ **- .10 * 120000000(1-.45) = 6400000 $**

Thank For Your Good Listening!