

## Chapter 6 (Cost-Volume Profit Relationships)

Cost-volume profit (CVP) analysis is a powerful tool that helps managers understand the relationships among cost, volume and profit.

CVP analysis focuses on how profits are affected by the following 5 factors:

- 1) Selling prices
- 2) Sales volume
- 3) Unit variable costs
- 4) Total fixed costs
- 5) Mix of products sold

Break-Even Point (BEP): BEP is that point where total revenues and total expenses are equal.

- Fixed cost ~~উচ্চ~~ ~~অস্বল্প~~

- ~~মাত্র / ক্ষতি~~ ~~কিছু~~ ~~হবে না~~, Profit = 0

Contribution-income statement:

|                       |   |       |
|-----------------------|---|-------|
| Sales                 | → | x x x |
| Deduct: Variable Cost |   | x x x |
| Contribution Margin   |   | x x x |
| Deduct: Fixed Cost    |   | x x x |
| EBIT/Profit           |   | x x x |

\* Net operating income = Profit  
= Earnings before Interest and Taxes (EBIT)

### Equation Method:

$$\text{Sales} = \text{Variable Cost} + \text{Fixed Cost} + \text{Profit}$$

Hence,

$$\text{Sales} = \text{Selling price per unit} \times \text{quantity sold}$$

$$\text{Variable cost} = \text{variable expenses per unit} \times \text{quantity sold}$$

### Formula Method:

$$\text{BEP (in units)} = \frac{\text{fixed cost} + \text{Target Profit}}{\text{Unit Contribution Margin}}$$

$$\text{BEP (in dollar)} = \frac{\text{fixed cost} + \text{Target Profit}}{\text{CM Ratio}}$$

where,

Unit CM = selling price per unit - variable cost per unit

Profit = Unit CM  $\times$  quantity sold - Fixed cost

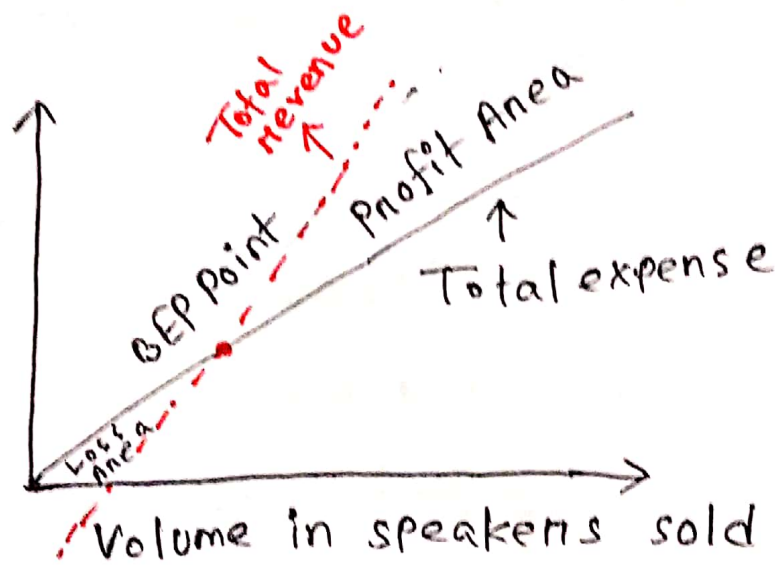
$$\text{CM ratio} = \frac{\text{CM}}{\text{Sales}} \times 100$$

\* CM: CM is the amount remaining from sales revenue after variable expenses have been deducted. First it covers the



fixed expenses and later contributes to profit.

CVP Graph: A graphical representation of the relationships between an organization's revenues, costs and profits on the one hand and its sales volume on the other hand.



## Chapter 9 (Profit Planning)

▣ Budget: A budget is a quantitative plan for acquiring and using resources over a specified time period. Budgets are used for 2 distinct purposes — planning and control.

▣ Types of budget:

- 1) Functional budget (कार्यविधि)
  - a) Sales forecasting
  - b) Sales budget
  - c) Production budget
  - d) Direct materials budget
  - e) Direct labour budget
  - f) Manufacturing overhead budget
  - g) Administrative overhead budget
  - h) Selling and distribution overhead budget
- 2) Financial budget:
  - a) Cash budget
  - b) Budgeted income statement
  - c) Budgeted balance sheet



functional + financial  $\rightarrow$  Master Budget

Zero-based budget (প্রথম বাজেট)

Production Budget formula

|                        |       |
|------------------------|-------|
| Budgeted Unit Sales    | x x x |
| Add: closing inventory | x x x |

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|             |       |
|-------------|-------|
| Total needs | x x x |
|-------------|-------|

|                             |       |
|-----------------------------|-------|
| Deduct: Beginning inventory | x x x |
|-----------------------------|-------|

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|                     |       |
|---------------------|-------|
| Required production | x x x |
|---------------------|-------|

Direct Materials Budget formula:

|                          |       |
|--------------------------|-------|
| Required production unit | x x x |
|--------------------------|-------|

|                             |     |
|-----------------------------|-----|
| Add: Ending inventory of RM | x x |
|-----------------------------|-----|

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|                           |     |
|---------------------------|-----|
| Total raw materials needs | x x |
|---------------------------|-----|

|                                   |   |
|-----------------------------------|---|
| Deduct: Beginning inventory of RM | x |
|-----------------------------------|---|

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|                               |       |
|-------------------------------|-------|
| Raw materials to be purchased | x x x |
|-------------------------------|-------|

Math: TT (9.1-9.7)

Final: 11, 12, 13, 14, 16, 17

Review problem (PDF P-426)

▣ Cash budget formula:

|                                   |       |
|-----------------------------------|-------|
| Beginning cash balance            | x x x |
| Add: Cash receipts                | x x x |
| <hr/>                             |       |
| Total cash available              | x x x |
| Deduct: Closing cash disbursement | x x   |
| <hr/>                             |       |
| Closing cash budget               | x x x |

▣ Example of non-cash expense:

depreciation (অবচন) - Fixed asset ব্যবহারের  
ফলে দাম কমে যাওয়া

\* intangible item - অদৃশ্য

\* disbursement - প্রদান