

Accounting213 Final Study Guide

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Chapter 5: COST-VOLUME- PROFIT ANALYSIS

Contribution Margin Income Statement

Sales

-Variable Expenses:

Variable Cost of goods sold

Variable selling and Administrative (ex. Commission)

=Contribution margin

-Fixed expenses:

Fixed overhead

(ex. Salary)

Fixed selling and administrative

=Net Income

Joel's Kid's names are Annie, Jack, and Charlie

Break even in units and sales

$$BE \text{ Units} = \frac{\text{Total Cost}}{CM \text{ per unit}}$$

$$BE \text{ in sales} = \frac{\text{Total Cost}}{CM \text{ Ratio}} \text{ or } BE \text{ in units} \times \text{Price per unit}$$

$$\text{Contribution Margin Ratio} = \frac{\text{Total Contribution Margin}}{\text{Total Revenue}} = \frac{\text{Contribution Margin per unit}}{\text{Selling Price per unit}}$$

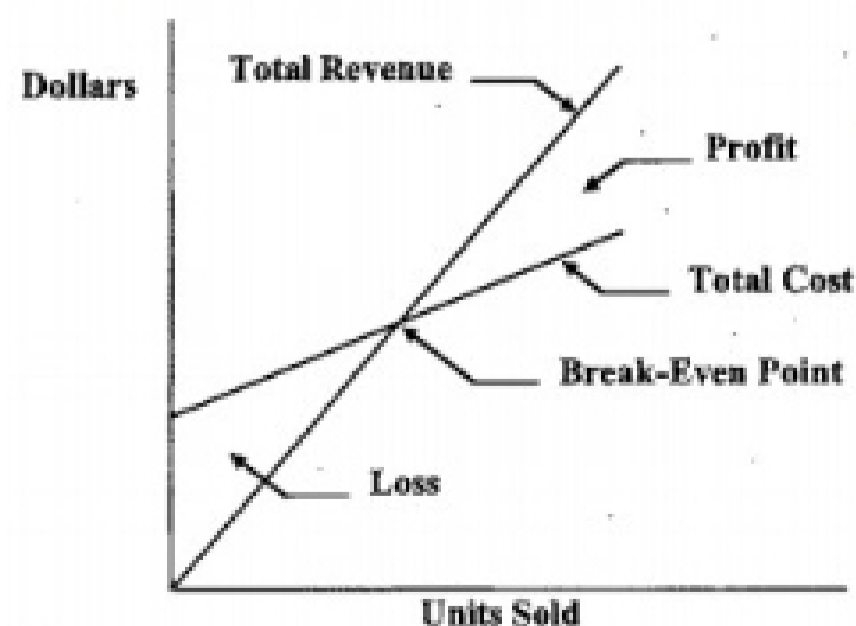
Unit and sales dollars needed to achieve a target profit

$$X \text{ units} = \frac{\text{Total Cost} + \text{Desired Profit}}{\text{Contribution margin per unit}}$$

$$\text{Sales Revenue} = \frac{\text{Total Cost} + \text{Desired profit}}{\text{Contribution margin ratio}}$$

$$\text{Before tax profit} = \frac{\text{Before tax target profit}}{1 - \text{tax rate}}$$

The Cost-Volume-Profit Graph



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Multiple-Product Analysis

- Steps →
1. Determine CM for each product
 2. Determine Sales Mix
 3. Multiply sales mix x CM per product=basket CM (add all products)
 4. Fixed cost/ basket CM= # of baskets at BE
 5. Unbundle the basket (# of baskets at BE x sales mix= Units at BE)
 6. BE revenue =sum of each products revenue @ BE

$$\text{CM ratio of bundles} = \frac{\text{CM bundle}}{\text{Price Bundle}}$$

Types of Fixed Costs

Direct Fixed expenses: fixed costs that can be traced to each segment (or product) and would be avoided if the segment did not exist

Common Fixed expenses: the fixed costs that are not traceable to the segments and would remain even if one of the segments was eliminated

Operating Leverage

$$\text{Degree of operating leverage (DOL)} = \frac{\text{Contribution Margin}}{\text{Operating Income}}$$

Percentage change in profit= DOL x percentage change in sales

Marginal Safety= actual sales- BE sales

Chapter 10- Differential Analysis

Relevant costs and benefits

Relevant cost or benefit: a cost or benefit that differs, in total, between the alternatives. Any cost or benefit that does not differ between the alternatives is irrelevant and can be ignored. Relevant costs are also known as differential costs and benefits.

Avoidable costs: those costs that can be eliminated in whole or in part by choosing one alternative over another. Avoidable costs are relevant costs and also known as direct fixed costs, traceable fixed costs, or fixed costs not yet incurred

Unavoidable fixed costs: 1. Common fixed costs (ex. Depreciation) 2. Joint costs. 3. General fixed costs.

Costs useful for decision → variable costs & avoidable fixed costs

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Contribution Margin
-Avoidable
=Segment Margin
-Common Cost
= Operating Income

If Segment Margin > 0 → KEEP

If Segment Margin < 0 → DROP

Make or Buy

Make → how much to make?

Benefit = (Buy - Make) x # of units

Buy → offered price

*if Buy - Make > 0 then MAKE

if Buy - make < 0 then BUY

*if there is a opportunity cost...

Make → make price x # of units = benefit of make + opportunity of cost = new benefit

Buy → buy price x # of units = benefit of buy

*if benefit buy - benefit of make > 0 then MAKE

if benefit of buy - benefit of make < 0 then BUY

Special orders

*Will always be for lower price or special feature

Do contribution margin income statement but for VC make sure to only take avoidable costs into account

*really review examples

Utilization of Constrained Resources

Steps → 1) determine CM by product

2) Determine CM per scarce resource (=CM/machine hours)

3) Use CM per scarce resource to rank

4) produce product by rank up to their sales constraints

Hrs. Available

-Max rank #1 (units at rank #1 x machine hours)

=new Hrs. Available

-Max rank #2 (units at rank #2 x machine hours)

=new Hrs. Available

-Max rank #3... etc. (units at rank #3... etc. x machine hours)

=hrs. Remain

*Can't do a max if the new hrs. available = negative. Must take hrs. remain and divide by machine hours to get product sales mix.

5) Take sales mix for every product x each products CM = CM for sales mix

*** Each additional minute of machine time if the company has made the best use of the existing machine capacity will be the CM per minute of the last ranked product.

Joint Product Costs