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School of Business

Chapter 14

Pricing Concepts For Establishing Value (Part I)

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Today's concepts

- List the four pricing orientation strategies
- Explain the relationship between price and quantity sold
- Explain price elasticity and cross-price elasticity
- Describe how to calculate a product's break-even point

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What is price?

Price is NOT just what you pay - it's everything that you, as a consumer, give in exchange for the product you purchase (time, effort in finding it, effort spent researching it)

Uber example

Desperation

- How much battery is left on a traveler's cell phone can help predict whether or not people are going to accept surge pricing!

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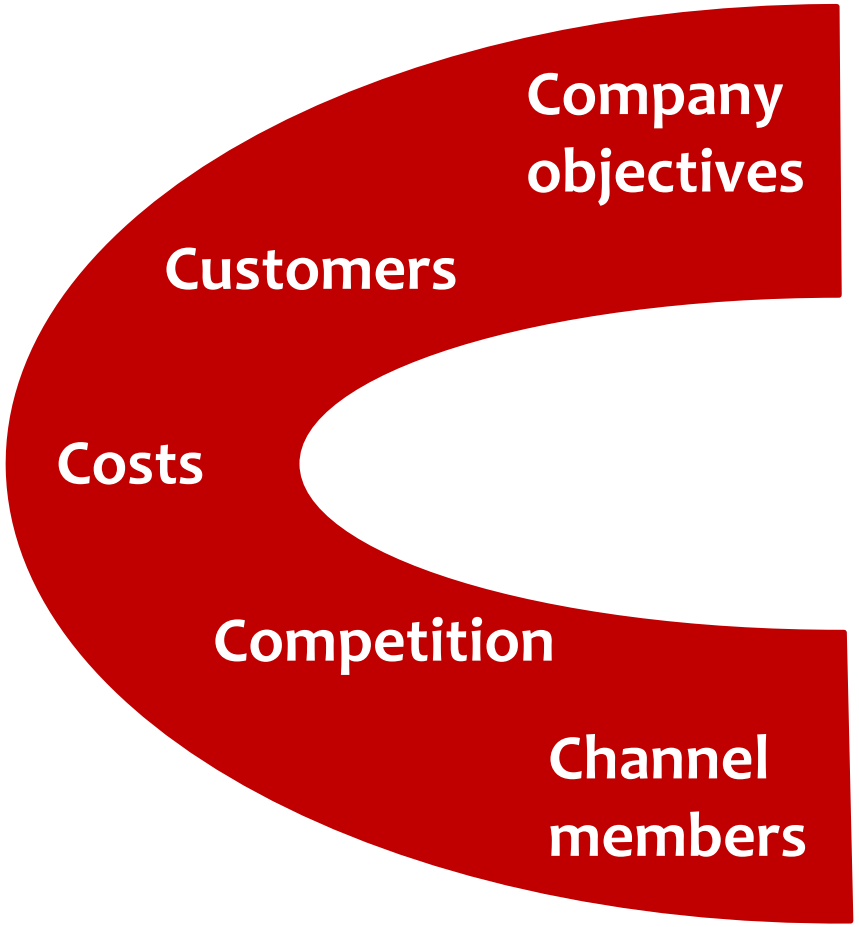
The 5 C's of Pricing



1.Company objectives

Profit oriented

1. Target profit pricing → Set profit goal
2. Maximizing profit → Require data analysis (math model)
3. Target return pricing → Profit relative to the investments

Example:

Companywide policy that all products must provide for at least an 18% profit margin to reach a particular **profit goal** for the firm

- Starbucks 1% price increase in 2013 http://www.priceintelligently.com/blog/bid/184451/How-Starbucks-Uses-Pricing-Strategy-for-Profit-Maximization

1.Company objectives

Sales oriented

Set prices to increase sales

- Generally short-term strategy

One main strategy:

- Set **low prices** to increase sales
- Use **premium pricing** (higher than competition prices) → gain market share by producing a high-quality product at a price perceived to be fair by the target market
  - Nike, Apple, etc.

1.Company objectives

Competitor oriented

Firms that measure themselves against their competitors

- Set prices similar to competitors (**competitive parity**)
- Change prices only to meet those of the competitors (**status quo pricing**)

Example (generally product with little differentiation):

- Coke and Pepsi
- Airlines

1.Company objectives

Customer oriented

Set prices to add value to product/services

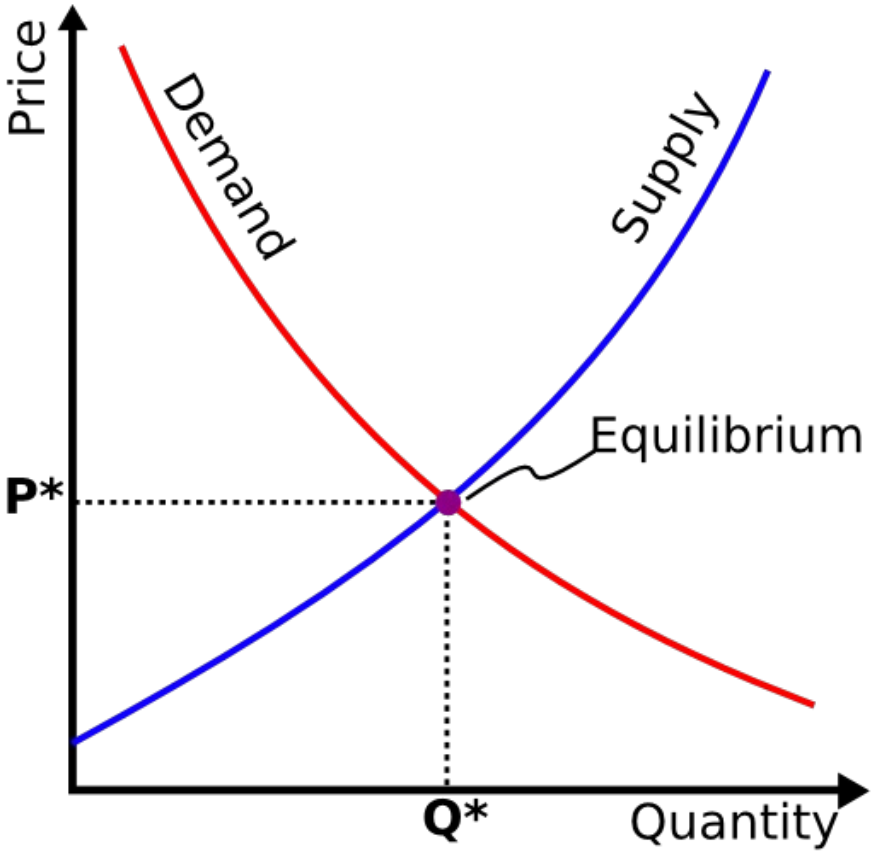
- Set high prices to set customers perceptions, e.g., Apple, Rolex
- Could be a problem if quality is low!

Example:
Target a market segment of consumers who highly value a particular product benefit, and set prices relatively high

- Fashion industry
- Luxury goods

2.Customers

Supply - Demand Curve

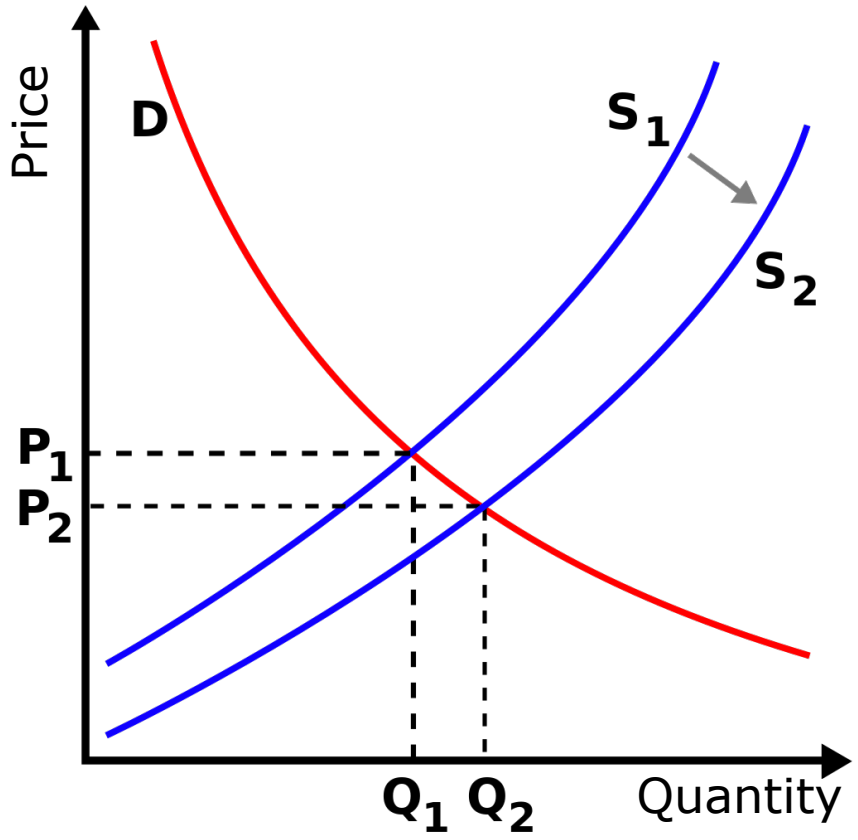


Demand is the quantity of a product that buyers are willing to purchase at various prices.

Supply is the quantity of a product that sellers are willing to sell at various prices.

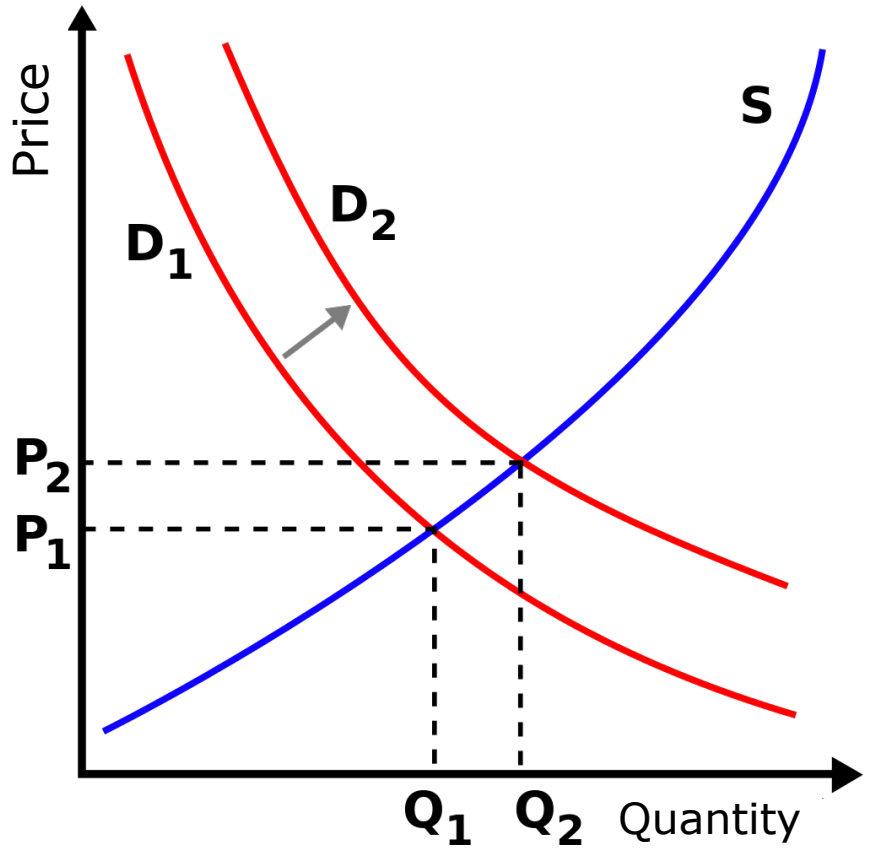
2.Customers

Supply - Demand Curve: Supply shifts



2.Customers

Supply - Demand Curve: Demand shifts



2.Customers

Demand curve and pricing

- Note: not all demand curves are downward trends!
- Prestigious product or services have upward trends

2.Customers

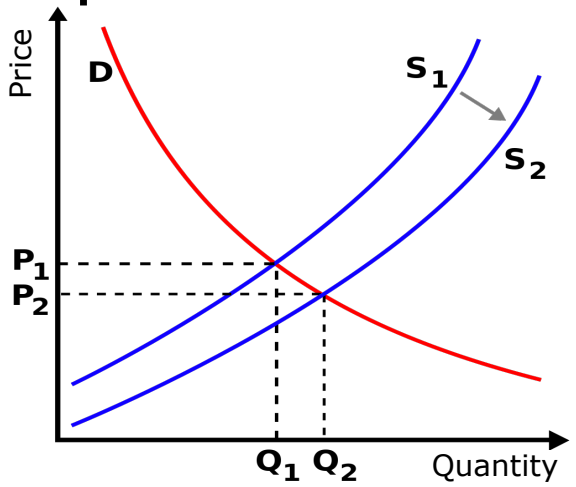
Price elasticity of demand:

– How changes in price affect quantity demanded

$$\textit{Price Elasticity} = \frac{\textit{Pct. Change in Quantity}}{\textit{Pct. Change in Price}}$$

Price elasticity of demand

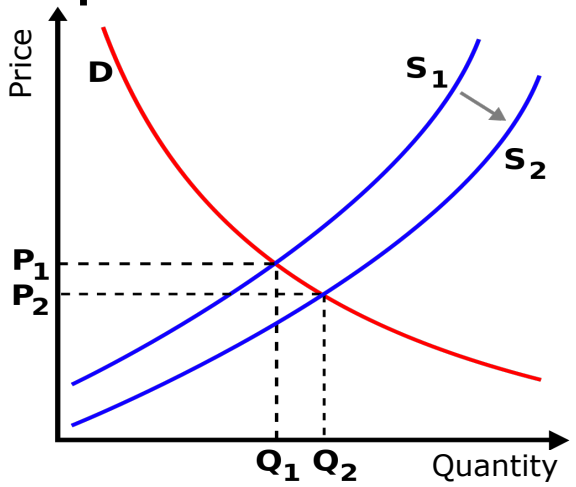
- Example



$$P_1 = \$10 \qquad P_2 = \$5$$
$$Q_1 = 0.5M \qquad Q_2 = 0.75M$$

Price elasticity of demand

- Example



$$P_1 = \$10 \qquad P_2 = \$5$$
$$Q_1 = 0.5M \qquad Q_2 = 0.75M$$

- **Pct. change Q** $= \frac{Q_2 - Q_1}{Q_1} * 100 = \frac{0.75 - 0.5}{0.5} * 100 = 50\%$
- **Pct. change P** $= \frac{P_2 - P_1}{P_1} * 100 = \frac{5 - 10}{10} * 100 = -50\%$
- **Elasticity** $= \frac{\boldsymbol{Pct.Change\ in\ Quantity}}{\boldsymbol{Pct.Change\ in\ Price}} =$ -1

Price elasticity of demand

- **Elasticity** = -1
  - 1% decrease in price results in an increase of 1% in quantity demanded

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- Elastic market (elasticity is ≤ -1) → price sensitive
  - Small change in price, large change in demand
- Inelastic market (elasticity is > -1) → price insensitive
  - Changes in prices have small or no effect on demand

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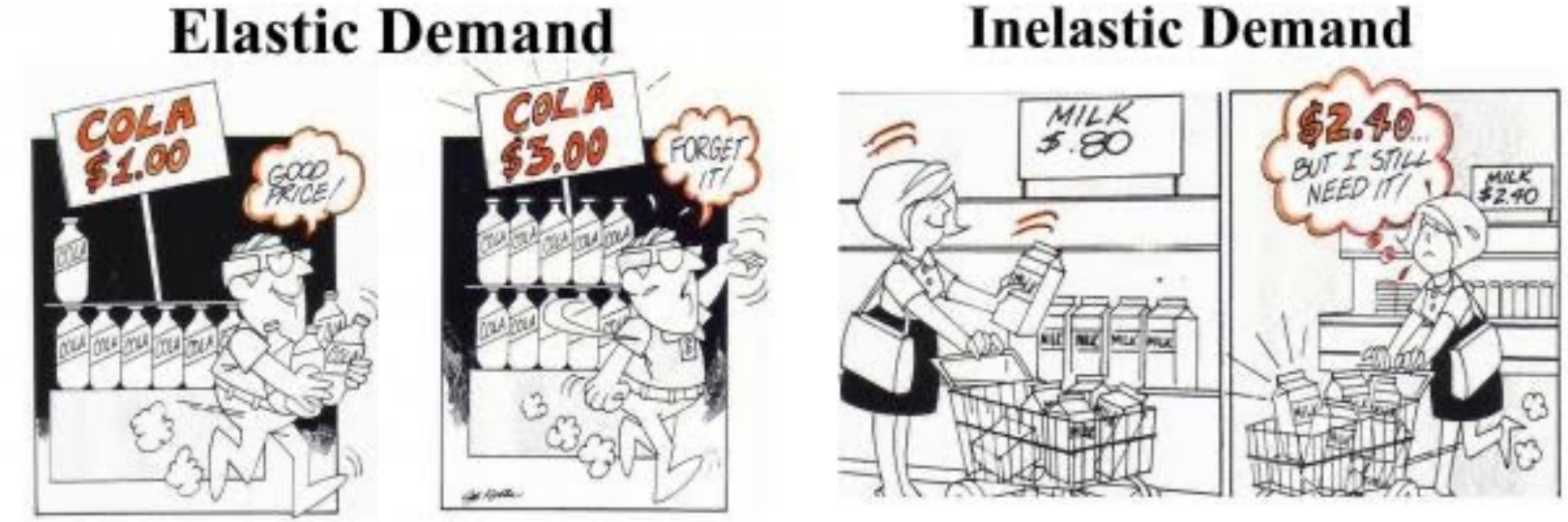
In which markets is it better to raise prices?

2.Customers

Customers are generally less sensitive to primary products (**necessities**)



2.Customers

Factors influencing price elasticity

- Income effect

2.Customers

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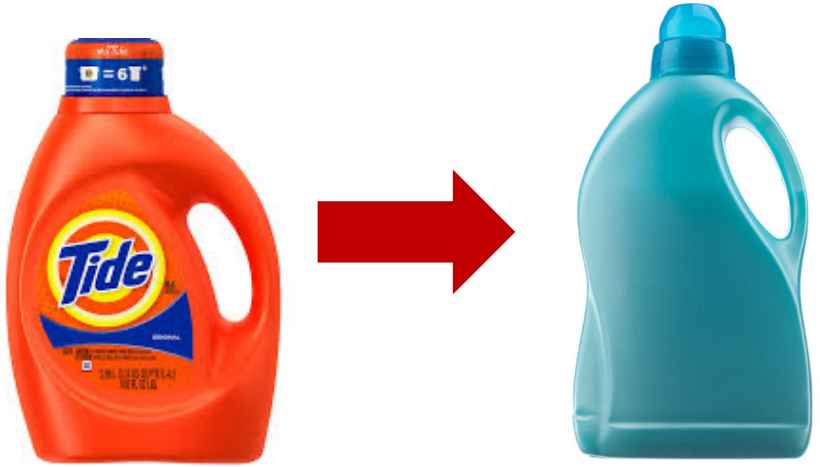
Factors influencing price elasticity

- Substitution effect
  - The greater the availability of substitutes of a product, the higher the price elasticity



2.Customers

- **Cross-price elasticity**
  - Pct. change in the quantity demanded for product X compared to the percentage change in price of product Y:

$$E_{xy} = \frac{\text{Percentage Change in Quantity of X}}{\text{Percentage Change in Price of Y}}$$

$$= \frac{\frac{\Delta Q_x}{Q_x}}{\frac{\Delta P_y}{P_y}} = \frac{\Delta Q_x}{Q_x} \times \frac{P_y}{\Delta P_y} = \frac{\Delta Q_x}{\Delta P_y} \times \frac{P_y}{Q_x}$$

where:

$Q_x = \text{Quantity of good X}$

$P_y = \text{Price of good Y}$

$\Delta = \text{Change}$

2.Customers

The cross-price elasticity sign depends on whether X and Y are complements or substitutes

– Complements → Demand for X and Y a positively correlated (cross-price elasticity is negative!)
  - French fries and ketchup

– Substitutes → Demand for X and Y are negatively correlated (cross-price elasticity is positive!)
  - Different brands of similar products, e.g., Pepsi and Coke

2.Customers

Cross-price elasticity example:

- Price of Y changes from $6 to $4
- Quantity of X changes from 4 to 8

$$E_{xy} = \frac{\frac{8-4}{4}}{\frac{4-6}{6}} = -3$$

- X and Y are **complements**: Because the price of Y decreases, its demand increases; and because Y demand increases, X demand also increases

3.Costs

To make effective price decisions firms must take into account costs

- Variable costs
  - Vary with production volume
- Fixed costs
  - Unaffected by production volume
- Total costs
  - Sum of variable and fixed costs

3.Costs

Example: hotel's variable and fixed costs:

3.Costs

Example: hotel's variable and fixed costs:

- Fixed: Land, Building Taxes to government
- Variable: Food, beverages, house keeping cleaning supplies

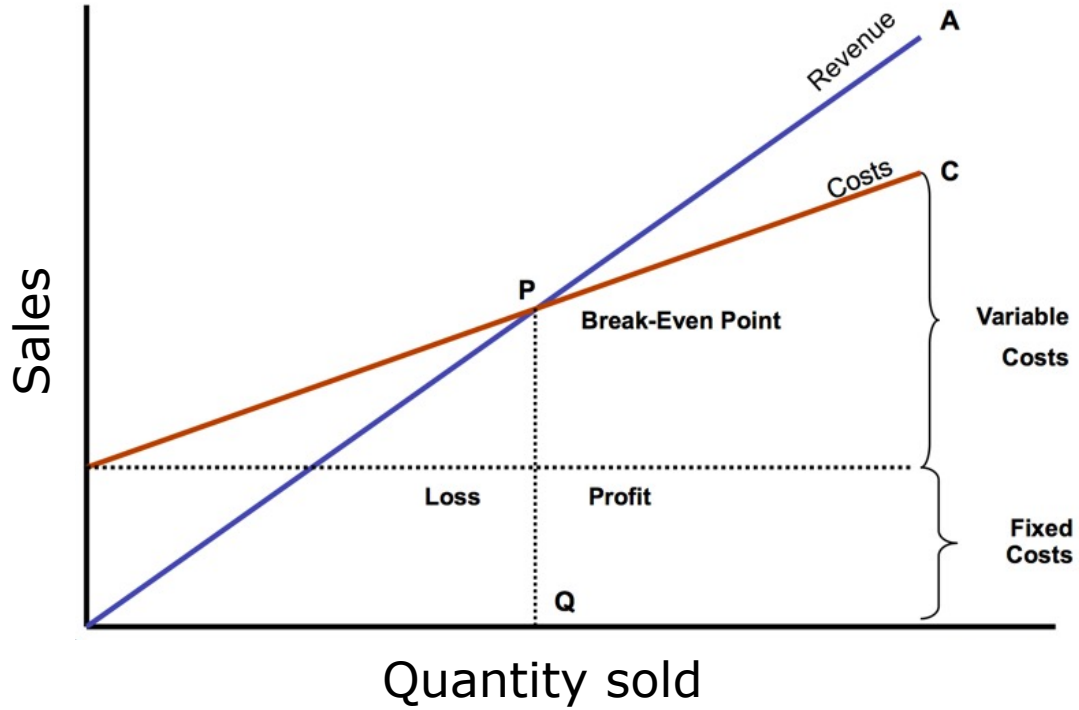
http://setupmyhotel.com/train-my-hotel-staff/front-office-training/187-fixed-cost-and-variable-cost-in-hotels.html

3.Costs

Break-even analysis

Break-even point: # of units to sell in order to cover the total costs

- At this point profit is zero!



Break-even analysis

- Computing break even point

  Revenue = Total costs

3.Costs

Break-even analysis

- Computing break even point

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  P x Q = fixed costs + variable costs

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  P x Q = fixed costs + variable costs per unit x Q

Break-even analysis

- Computing break even point

  Revenue = Total costs

  P x Q = fixed costs + variable costs

  P x Q = fixed costs + variable costs per unit x Q

- We want to find Q (break-even units):

$$Q = \frac{Fixed\ costs}{P\ - variable\ cost\ per\ unit}$$

Contribution per unit

3.Costs

Break-even analysis

Example 1:

- Suppose that a company sells its products for $15 each, with variable costs of $6 per unit and total fixed costs of $300

3.Costs

Break-even analysis

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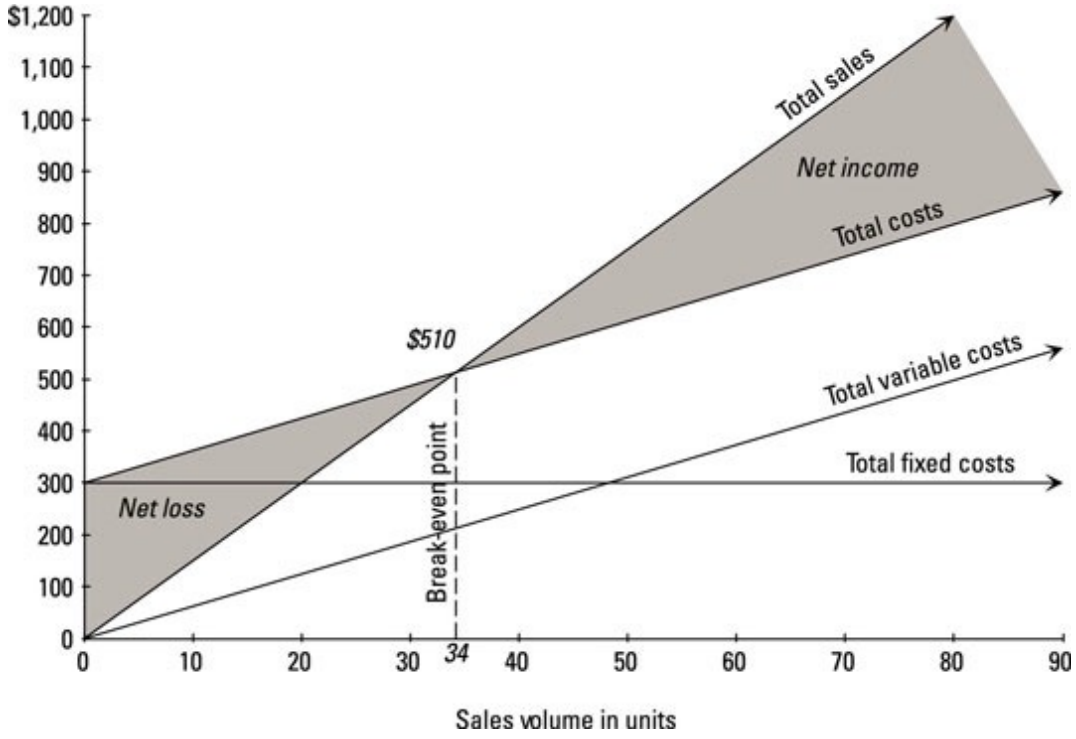

$$Q = \frac{\$300}{(\$15 - \$6)} = 33.3$$

3.Costs

Break-even analysis

Example 2:

- Fixed cost= $100,000
- Variable cost per unit = $10
- Price per unit (P) = $50

3.Costs

Break-even analysis

Example 2:

- Fixed cost= $100,000
- Variable cost per unit = $10
- Price per unit (P) = $50

$$Q = \frac{\$100{,}000}{\$50 - \$10} = 2{,}500$$

3.Costs

Break-even analysis

Computing # of units for target profit

- Example 3:
  - Fixed cost= $100,000
  - Variable cost per unit = $10
  - Price per unit (P) = $50
  - **Firm wants a target profit of $50,000**

Break-even analysis

Computing # of units for target profit

- Example 3:
  - Fixed cost= $100,000
  - Variable cost per unit = $10
  - Price per unit (P) = $50
  - **Firm wants a target profit of $50,000**

$$Q = \frac{\$100{,}000 + \$50{,}000}{\$50 - \$10} = 3{,}750$$

3.Costs

Break-even analysis

Computing profit (more generally):

Profit = P x Q – (fixed costs + variable costs per units x Q)

= Contributions per unit x Q – fixed costs

P = Price per unit, Q = Quantity sold

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4.Competition

Prices are affected by the presence and capabilities of competitors

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- Pure or Perfect Competition
  - Large number of firms
  - Homogeneous products
  - Easy entry/exit
  - No market power (**price taker**)
    - Firms accept the **prevailing prices**

4.Competition

Prices are affected by the presence and capabilities of competitors

- Monopoly
  - One firm in the market (e.g., city, regional area, and doesn't necessarily have to be an entire country)
  - Unique product
  - Blocked entry (e.g., limited by government)
  - Significant market power

4.Competition

Prices are affected by the presence and capabilities of competitors

- Oligopoly
  - Few large firms supply a sizable portion of products in the market
  - Homogenous or differentiated products
  - Significant barriers to entry (costly)
  - The market power of a firm depends on the actions of the other firms in the industry

4.Competition

Prices are affected by the presence and capabilities of competitors

- Monopolistic (imperfect) competition
  - Large number of firms
  - Differentiated products—products that differ slightly but serve similar purposes→ products are not perfect substitutes
  - Low barrier to entry
  - Some degree of market power

4.Competition

	Less price competition	More price competition
Fewer firms	Monopoly	Oligopoly
More firms	Monopolistic competition	Pure competition

5. Channel members

Manufacturers, wholesalers, retailers

- They can have different perspectives on pricing strategies

- Example: Manufacturer and retailer
  - They agree on a min price to sell TVs but the retailer has too many and in order to move them, he sells them at a non-authorized price!

Recap

Price is affected by many factors

- The company objective of the firm: Profit? Sales?
- Which customers the firm is targeting?
- Firm costs: variables and fixed
- Competitions: is there someone else selling a similar product to mine?
- Channel members (manufacturers, wholesalers, retailers)