Elasticity of demand and total revenue

The elasticity of demand tells suppliers how their total revenue will change if their price changes.

*Total revenue* equals total quantity sold multiplied by price of good.

**Total Revenue Along a Demand Curve**

With *elastic* demand – a rise in price lowers total revenue and TR decreases as price falls.

With *inelastic* demand – a rise in price increases total revenue and TR decreases as price falls.

*If* $E_D$ *is inelastic* ($E_D < 1$), *a rise in price increases total revenue.*

*If* $E_D$ *is unit elastic* ($E_D = 1$), *a rise in price leaves total revenue unchanged.*

*If* $E_D$ *is elastic* ($E_D > 1$), *a rise in price lowers total revenue.*

**Elastic Demand and Total Revenue**

**Elastic Demand: Elasticity > 1**

Percentage change in quantity is greater than percentage change in price

Raise Price: quantity demanded falls more → Higher price, lower total revenue

Lower Price: quantity demanded rises more → Lower price, higher total revenue

**Example of Elastic Demand and Total Revenue**

Price of Tim Horton’s coffee Rises 10% from $0.95 to $1.05

Quantity Falls 20% from 110 to 90 cups per hour

Elasticity = 20%/10% = 2

Total Revenue before the price rise:

$0.95 \times 110 = \$104.50$

Total Revenue after the price rise:

$1.05 \times 90 = \$94.50$
**Inelastic Demand and Total Revenue**

Inelastic Demand: Elasticity < 1

Percentage change in quantity is less than percentage change in price

Raise Price: quantity demanded falls less → Higher price, higher total revenue

Lower Price: quantity demanded rises less → Lower price, lower total revenue

**Example of Inelastic Demand and Total Revenue**

- Price of gasoline Rises 10% from 66.5 cents to 73.5 cents
- Quantity Falls 5% from 205 to 195 liters per hour
- Elasticity = 5%/10% = .5
- Total Revenue before the price rise: 
  \[
  \$.665 \times 205 = \$136.33
  \]
- Total Revenue after the price rise: 
  \[
  \$.735 \times 195 = \$143.33
  \]