

HEALTH ECONOMICS

Health Economics

Concepts & Tools

What Is Economics?

- Study of how society allocates its scarce resources
 - Unlimited wants, limited resources
 - Tradeoffs \Rightarrow Must make decisions



Economics

- Framework rather than set of solutions

- Study human behavior

- Way individuals make decisions
- Way individuals respond to incentives
- Way people interact with each other

- Help define alternative mechanisms available to improve resource allocation



Health Economics

- Use economic tools to study resource management issues specific to health care



Relevance

- Economics gives us a way of organizing our thinking about problems that confront us every day



Relevance

- Future health care decision makers will need training & knowledge
 - Natural sciences
 - Statistics
 - Epidemiology
 - Behavioral sciences
 - Ethics
 - Decision analysis
 - Economics



Economic Way of Thinking

- Includes
 - Jargon
 - Graphical Analyses
 - Mathematical Expressions



10 Key Concepts

- (1) Scarcity & Choice
- (2) Markets & Pricing
- (3) Opportunity Cost
- (4) Supply & Demand
- (5) Self-Interest



10 Key Concepts

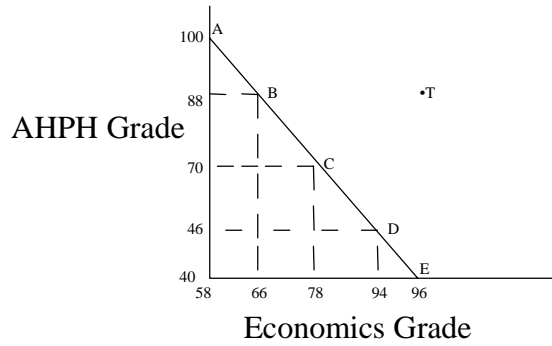
- (6) Efficiency
- (7) Competition
- (8) Market Failure
- (9) Comparative Advantage
- (10) Marginal Analysis



(1) Scarcity and (2) Pricing

- Need to ration
 - 1st come, 1st served
- Price system
 - “Invisible Hand”

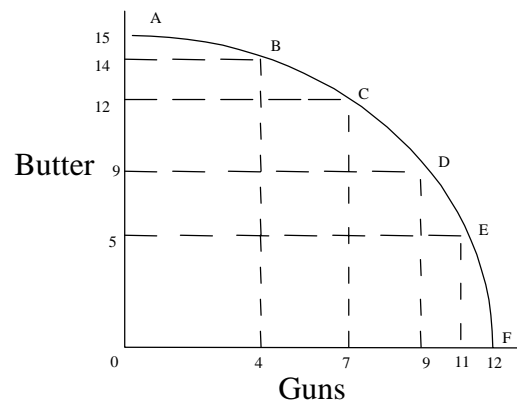
Production Possibility Curve



■ Tradeoffs

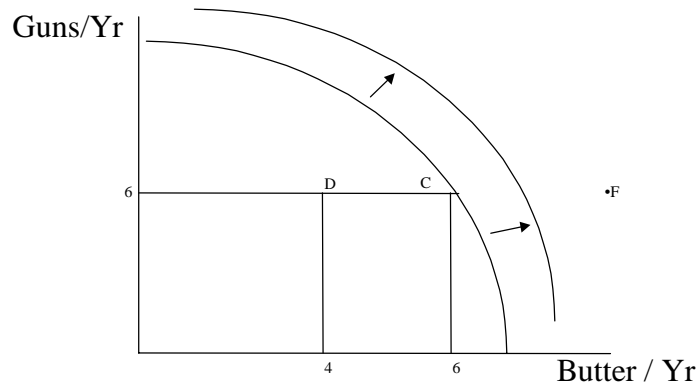
- Time is scarce
- Opportunity Cost: Must give up to get

Production Possibility Curve



■ Increasing Marginal Opportunity Cost

Production Possibility Curve



- Economic Growth
 - PPC shifts out

(3) Opportunity Costs

- Value of the next best alternative foregone

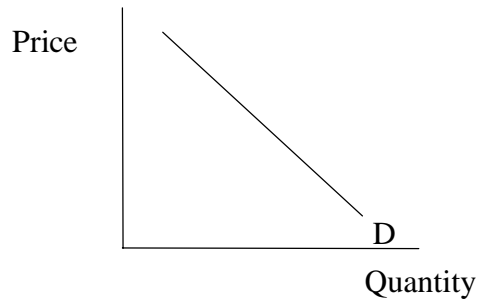
– E.g.,

	A	B	C
Value	20	12	8
Price	10	10	10

- Choose A, B, or C?
- What is the value of the next best alternative?

(4) Demand

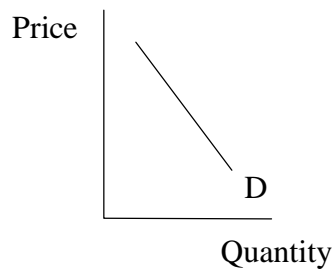
Law of Demand: $\uparrow P \Rightarrow \downarrow Q_d$
 $\downarrow P \Rightarrow \uparrow Q_d$



Substitution Effect: $\uparrow P \Rightarrow$ Look for cheaper alternatives

Income Effect: $\uparrow P \Rightarrow$ Income \downarrow in a real sense

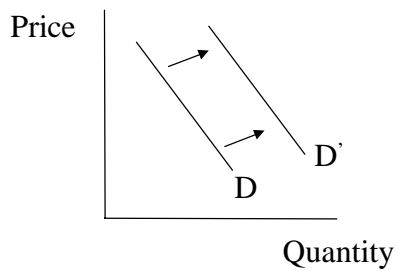
(4) Demand



Movement Along

Demand Curve

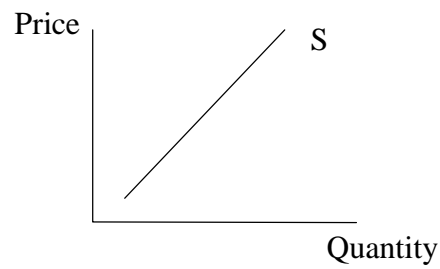
Change in Price
of a Good \Rightarrow Change
in Qty Demanded



Shift of Demand Curve

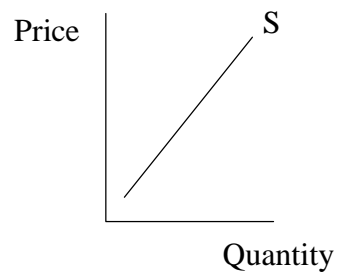
Change in Something Else
(e.g., Income, Price of Related Good,
Population, Preferences,
Expectations) \Rightarrow Change in Demand

(4) Supply

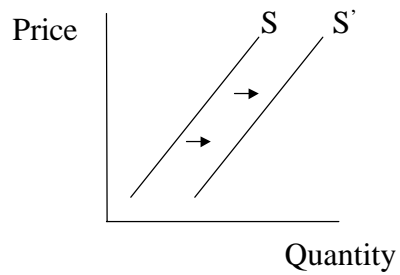


■ Law of Supply: $\uparrow P \Rightarrow \uparrow Q_s$

(4) Supply

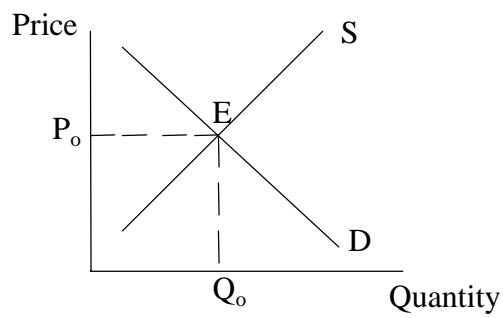


**Movement Along
Supply Curve**
Change in Price
of a Good \Rightarrow Change
in Qty Supplied



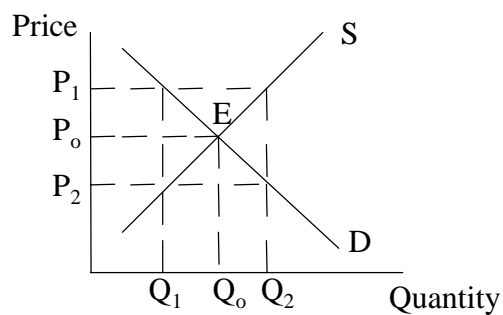
Shift of Supply Curve
Change in Something Else
(e.g., Technology, Price of Inputs,
of firms, Expectations)
 \Rightarrow Change in Supply

(4) Equilibrium



- E: (P_o, Q_o)
- Equilibrium: $Q_d = Q_s$

(4) Equilibrium



- Shortage at P_2 : $Q_d > Q_s$
- Surplus at P_1 : $Q_d < Q_s$



(4) Price Elasticity of Demand

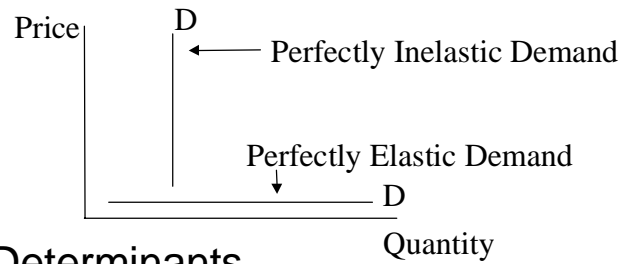
- E_d is the responsiveness of quantity demanded to change in price
- $E_d = \% \Delta \text{in } Q / \% \Delta \text{in } P$



(4) Price Elasticity of Demand

- **Consider absolute values:**
- $E_d = \infty \quad \Rightarrow$ Perfectly Elastic
- $1 < E_d < \infty \quad \Rightarrow$ Elastic
- $E_d = 1 \quad \Rightarrow$ Unit Elastic
- $0 < E_d < 1 \quad \Rightarrow$ Inelastic
- $E_d = 0 \quad \Rightarrow$ Perfectly Inelastic

(4) Price Elasticity of Demand



■ Determinants

- \uparrow # of Substitutes $\Rightarrow \uparrow$ Elasticity
- More time to adjust $\Rightarrow \uparrow$ Elasticity
- High proportion of Income $\Rightarrow \uparrow$ Elasticity
- Necessity $\Rightarrow \downarrow$ Elasticity

(4) Price Elasticity of Demand

■ $TR = P \times Q$

- Q: What happens to TR when P increases?



Exercises

- Supply and Demand
- Elasticity of Demand



(5) Self Interest

- Economic decision makers are motivated to pursue their own self interest
 - People respond to incentives & constraints when they individually benefit
- Individual self interest leads to promotion of the general welfare of everyone in society
 - Adam Smith



(6) Efficiency

- Society getting the most it can from its scarce resources



(7) Competition

- Forces resource owners to use their resources efficiently
 - Get the highest possible satisfaction of society
- Production shifts from hands of less competent to hands of the more efficient
 - Promotes more efficient methods of production



(8) Market Failure

- Free markets sometimes fail to promote efficient use of resources
 - Produce more or less than optimal level of output
- Sources:
 - Natural monopoly
 - Externalities in production and consumption
 - Public goods
 - Incomplete information



(9) Comparative Advantage

- Everyone specializes in activity they do best (I.e., lowest opportunity cost)



(10) Marginal Analysis

- Economic way of thinking about optimal resource allocation
 - Choices are rarely made on an all-or-nothing basis
 - Choices are made “at the margin”
- Compare benefits & costs at the margin
 - Marginal Benefit (MB)
 - Marginal Cost (MC)



(10) Marginal Analysis

- Individuals maximize (optimize) utility subject to budget constraints
 - Consume at level where $MB = MC$
- Firms maximize (optimize) profits subject to resource costs
 - Produce at level where $MR = MC$



Utility

- Way to quantify enjoyment people get from goods and services
- **Marginal Utility:** the change in utility from an additional unit

– E.g.,

	TU	MU
0	0	---
1	14	14
2	26	12



Utility

- **Diminishing Marginal Utility:** the more of something you consume, the less utility you get from an extra unit
 - E.g., Buffets, Alcohol/beverages