

King Saud University
College of Business Administration
Department of Health Administration - Masters` Program

HHA 524 Health Economics
Second Semester 1442/ 1443

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Chapter 1

Why Health Economics?

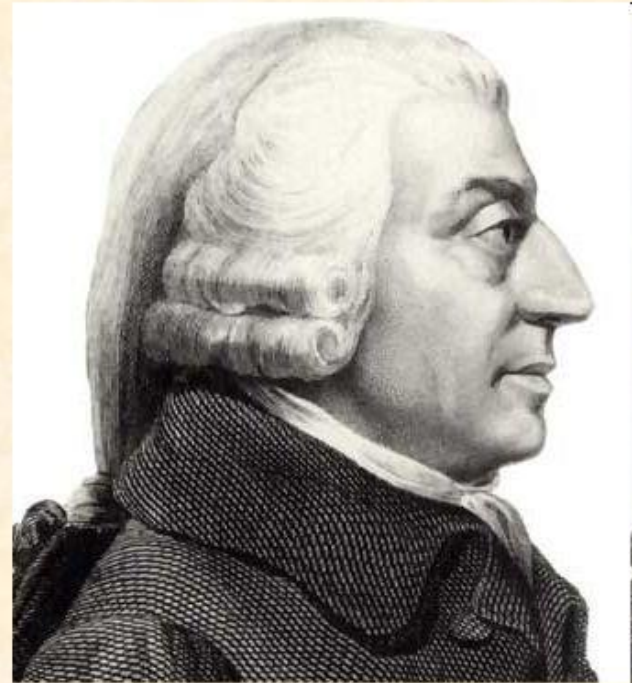
Learning Objectives

- Understand the features of an **economic approach to analyzing** social issues in general, and to analyzing health, health care, and health insurance issues in particular.
- **Explain the types of relationships** studied by health economists.
- **Describe how economics** helps managers
- **Identify major challenges** for managers
- **Identify positive and normative** economics

Adam Smith who is considered the father of modern economics

Background Info

- Born in a small village in Kirkcaldy, Scotland
- Wrote *The Wealth of Nations*, which was published in 1776
- Never married
- Strongly opposed mercantilism
- Died in Edinburgh on July 19, 1790
- The “father” of modern economics



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Why Health Economics?

Adam Smith was an 18th-century Scottish economist, philosopher, and author who is considered the **father of modern economics**.

Smith argued against *mercantilism* and was a major proponent of *laissez-faire economic policies*. In his first book, *The Theory of Moral Sentiments*, Smith proposed the idea of an *invisible hand*—the tendency of free markets to regulate themselves using competition, supply and demand, and self-interest.

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Why Health Economics?

Adam Smith

Smith is also known for creating the concept of gross domestic product (**GDP**) and for his theory of compensating wage differentials.

According to this theory, dangerous or undesirable jobs tend to pay higher wages to attract workers to these positions.

Smith's most notable contribution to the field of economics was his 1776 book, *An Inquiry into the Nature and Causes of the Wealth of Nations*.

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Why Health Economics?

Adam Smith

The Theory of Moral Sentiments, a book whose main contention is that human morality depends on sympathy between the individual and other members of society.

Laissez-faire is an economic theory from the 18th century that opposed any government intervention in business affairs.

Smith's ideas are a reflection on economics in light of the beginning of the Industrial Revolution, and he states that free-market economies (i.e., capitalist ones) are the most productive and beneficial to their societies.

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Why Health Economics?

Adam Smith

The Wealth of Nations which is thought of as the first work dedicated to the study of political economy.

Economics of the time were dominated by the idea that a country's wealth was best measured by its store of gold and silver.

Smith proposed that a nation's wealth should be judged not by this metric but by the total of its production and commerce—today known as the **gross domestic product (GDP)**.

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Why Health Economics?

The Nature of Economics

Economics: There are different definitions of economics

- 1. Economics** is what economics do. It is defined by who does it.
- 2. Economics** is “the study of ways that individuals and societies allocate their limited resources to try to satisfy their unlimited wants.”
 - In this **definition economics** is concern with the allocation of **scarce means** among competing goods (WHAT or ENDS), the choices we make and the consequences of these choices for ourselves and others.

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Why Health Economics?

The Nature of Economics

Economics: There are different definitions of economics

- In fact, the **central focus of economics** is on choices and decision making.
- **Social vs. Individual choices** like home economics.
- **Scarce means** that resources are limited and will be allocated for example between health services and society. **Goods** - What or Ends competing exchangeable goods will be produced by society, which production techniques will be used, and to whom the final product will be distributed (**consumption**).

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The Nature of Economics

Economics: There are different definitions of economics

- 3. Economics** is a “method rather than a doctrine, an apparatus of the mind, a technique of thinking which helps its possessor to draw correct conclusions.”
- **It includes knowledge and concepts**, but above all it is a habit of the mind (the way we think).

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Why Health Economics?

The Nature of Economics

- **Economics is concerned** with maximizing benefits from the resources available to us (the constrained maximization problem) and is based on three fundamental principles;
- **Scarcity, choice and opportunity cost.**
- **Scarcity** is the basic economic problem facing all societies. **It is a state that results** because resources are limited and can not accommodate all of our unlimited wants.

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The Nature of Economics

- **A good** (anything that adds to human happiness) is scarce if the amounts people desire are greater than the amount freely available, put differently, a good for which the quantity demanded exceeds the amount available at a zero-dollar price.
- **The few desirable things** that are not scarce are called free goods.

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Why Health Economics?

The Nature of Economics

- **Circumstances** make goods either free or scarce. Scarcity has two important dimensions.
- One is that **resources are limited**.
- **The other dimensions** of scarcity stems from our unlimited capacities to enjoy goods and services.
- Because of scarcity decisions and **opportunity costs are unavoidable**.

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Why Health Economics?

The Nature of Economics

- So, **choices** must be made about how to use whatever resources are available.
- These **choices** are often difficult.
- **Should we use funds** for a more effective but more expensive procedures, or may be channel these resources to provide preventive and primary care to great number of people.

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The Nature of Economics

- **Opportunity price or cost** is the value for the best alternative surrendered when a choice is made.
- **Opportunity costs** are crucial for rational decision making and also unavoidable.
- **Thus**, every cost is a sacrificed benefit and we know that a good business is that can keep costs down and benefits up. **Also related to this** is the social vs. private cost, and marginal vs. total cost.

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The Nature of Economics

- **Opportunity cost** (the highest valued alternative use of resources) represents the economic basis for making these choices.
- **Hence, if the benefits generated** from the way we choose to use resources exceed the benefits generated by using the same resources in their most productive alternative uses (i.e., the opportunity cost), then we have used the available resources efficiently

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The Nature of Economics

- **Health economics** is concerned with applying these principles to problems of health and health care.
- **However**, health and health care present particular challenges for the application of the economic principles because they have characteristics that make them different from standard goods and services bought and sold in private markets.

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Economics analyzes the allocation of scarce resources

- **Resource = something useful**
 - In consumption
 - In production
- **Scarce = has alternative uses**
- **Identify a resource that you use**
 - What is it?
 - How do you use it?
 - What are its other uses?
- **Is it a scarce resource?**

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Common Sense and Theory

- **In economics we try to develop relationships and we usually use theories, hypotheses, models, and graphs to explain the way that the world works.**
- **Some people may be skeptical about these ideas and their usefulness in the real world.**
- **Some people argue that theories are impractical and can barely cope with the “real world,” and view common sense as more practical for every day life. (But what is common sense?)**

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Why Health Economics?

Common Sense and Theory

- **Common Sense** is nothing more than a collection of old theories that has been tested over along period and found more or less useful.
- **Theory** is a testable hypothesis concerning the way in which observable facts are related.
- **Model** is the structure of a theory, in some cases a graphical representations of theories
- **Occam's Razor** is a philosophical principle that states the simplest explanation is usually the best one

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Positive Versus Normative Economics

- **Economists** agree most about **positive economics**, which involves scientific predictions about economics relationships.
- **Ideally positive economics** is value free and addresses *what is*, it deals mostly with demand.

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Positive Versus Normative Economics

- **Normative economics** is based on value judgments and addresses *what should be*.
- **Economists disagree most about normative issues.**
- It deals mostly with needs which frequently turn on questions of equity (**fairness**) and generate arguments among economists and the public alike.
- Most **public policy** is based on a combination of both **positive and normative** economics.

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Positive Versus Normative Economics

- *A positive economics example is a statement, “Government-funded healthcare surges public expenditures.” This statement is based on facts and has a considerable value judgement involved in it. Therefore, its credibility can be proven or dis-proven via a study of the government’s involvement in healthcare.*

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Positive Versus Normative Economics

- *A normative economics example is, “The government should make available fundamental healthcare to every citizen”. You can understand that this statement is based on personal perspective and satisfies the need for ‘should be’ or ‘ought to be’.*

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Why Health Economics?

Macroeconomics and Microeconomics

- **Macroeconomics**, macro means large, thus macroeconomics is concerned with the economics of the entire society. It is the study of large, economy-wide aggregate variables such as indicators of total economic activity.
- **Macroeconomics** analysis is concerned with our banking and monetary systems and how our Gross National Product (**GNP**), unemployment, inflation, and economic growth are determined.

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Macroeconomics and Microeconomics

- **Macroeconomics** studies the association between various countries regarding how the policies of one nation have an upshot on the other.
- In **macroeconomics**, we normally survey the association of the nation's total manufacture and the degree of employment with certain features like cost prices, wage rates, rates of interest, profits, etc.,.

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Macroeconomics and Microeconomics

- **Microeconomics**, which is the subject of this course, is the analysis of the components of an economy and it is concerned with individual decision making, the allocation of resources among individual commodities; and how **prices, production, and distribution of income are determined.**
- **Thus, Microeconomics** focuses upon the interactions of individual households, firms, and specific government agencies

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Macroeconomics and Microeconomics

- **Microeconomics** is the study of decisions made by people and businesses regarding the allocation of resources and prices of goods and services. The government decides the regulation for taxes. Microeconomics focuses on the supply that determines the price level of the economy.
- It uses the bottom-up strategy to analyze the economy. In other words, microeconomics tries to understand human's choices and allocation of resources. It does not decide what are the changes taking place in the market, instead, it explains why there are changes happening in the market.

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Macroeconomics and Microeconomics

- **The key role of microeconomics** is to examine how a company could maximize its production and capacity, so that it could lower the prices and compete in its industry. A lot of microeconomics information can be obtained from the financial statements.
- **The key factors of microeconomics** are as follows:
 - Demand, supply, and equilibrium
 - Production theory
 - Costs of production
 - Labor economics

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Production and Resources

- **Production** occurs when we use knowledge or technology to apply energy to materials in order to make the materials more valuable.
- **Productive resources** (or factors of productions) are limited, and are conventionally categorized as labor, land, capital, and entrepreneurship. These resources provide the knowledge, energy, or materials that the production possible

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Production and Resources

- ***Labor*** refers to the physical or mental talents people make available to produce goods and services. payments for labor are called wages
- ***Land*** includes all natural resources, such as unimproved land, minerals, water, air, climate, forests, and wildlife. Payments per time periods for the use of land are called land rent.

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Production and Resources

- ***Capital*** refers to all physical improvements made to natural resources that facilitate production, such as buildings, machinery, and utility lines.
- ***Economic capital*** increases our capacity to produce other goods and services.
- ***Investment*** refers to new capital produced each year.

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Production and Resources

- *Financial capital* refers to currency, money in a bank account, or other paper assets normally a document of some sort that ultimately permits claims on raw resources or finished products.
- **Thus, financial capital** may be a paper claim on *economic capital*.
- The term capital in this book will normally refer to economic capital. Payments for both type of capital are called *interest*.

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Production and Resources

Entrepreneurship, **Entrepreneurs** are people who combine labor, natural resources, and capital to produce goods and services and who incur risk in their quest for **profits**.

Profit the excess of a firm's total revenues over total costs. It is a reward for bearing the business risks, organizing productive activities, and introducing innovations that improve our enjoyment of life.

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Why Health Economics?

Production and Resources

- **The production of health**—both at the individual and population levels—is no different from other production processes in that inputs are combined to produce a specific output.

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Why Health Economics?

Production and Resources

- **Health inputs** include **medical care** (e.g., physician visits, diagnostic tests, treatments), **lifestyle or behavior** (e.g., eating, exercise, smoking, and drinking habits), **environment** (e.g., land, air, and water pollution), **biological makeup** (e.g., gender, age, genetic predisposition), **and many others**.
- **A given output** (e.g., good health status) is achieved through various combinations of these inputs.
- **Simply put**, the production of health is the process of combining inputs to realize a desired output.

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Why Health Economics?

Economic Efficiency or Pareto Optimality

- *Economic efficiency* for society as a whole is achieved when we produce the combination of output with the highest attainable total value given our limited resources. Perhaps the definition of *inefficiency* is more easily understood from an *Economic efficiency* point view:
- *We have economic inefficiency if, by doing things differently, we could benefit some people without harming anyone else. “Doing things differently,” in turn, means either using our productive resources differently, or distributing our commodities differently among people.*

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Economic Efficiency or Pareto Optimality

Production efficiency. Production will be technically efficient when:

1. The *Opportunity costs* of a given value of output is **minimized**, or
2. The *value of output produced* from a given resources is maximized, or
3. The *value of output produced* for a given cost is maximized.

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Economic Efficiency or Pareto Optimality

Production efficiency.

- *Think about them for a moment* you can see that if any of these conditions is achieved the other two are also achieved automatically.
- *All three are specified* to make it easier to recognize inefficient situations.

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Economic Efficiency or Pareto Optimality

- *Consumption efficiency*. Allocative efficiency in consumers' purchasing patterns requires that they:
 1. **Maximize** the satisfaction attainable from their budgets, or
 2. **Minimize** the outlays required to obtain goods that yield a given amount of satisfaction.
- Whenever *Opportunity costs* are at their minimums for **all forms of consumption and production**, then every drop of potential net benefits is squeezed from the resources available

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Comparative Advantage

- The idea that **mutually beneficial trade** can always take place between two countries (or individuals) whose pre-trade cost and price structures differ.
- **Economic efficiency** is enhanced through trade, and a failure to trade when such gains are possible is inefficient.

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Comparative Advantage

- **Competitive advantage** is what a country, business, or individual does that provide a better value to consumers than its competitors.
- **There are three strategies** companies use to gain a competitive advantage.
 1. **First**, they could be the low-cost provider.
 2. **Second**, they could offer a better product or service.
 3. **Third**, they could focus on one type of customer.

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Why Health Economics?

Comparative Advantage Example

- A country that produces a large amount of oil charges a local chemical manufacturer less to purchase their product since it is cheaper to sell the oil to them than export it overseas. Since the chemical manufacturer is paying less for the materials, they need to produce chemicals, they can sell their finished products at a lower price than other countries. This makes them more competitive in the chemical production industry.
- Therefore, this company has a **comparative advantage** over other chemical production companies

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Specialization

- **Specialization** occurs when different people produce different things.
- **It allows individuals** to produce more and through exchange consume more.
- **The critical point is that** efficiency requires all resources to be used where they are relatively the most productive.

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Why Health Economics?

Specialization

- *Specialization* and exchange can raise the standards of living of all potential trading partners by enormous amounts.
- *Specialization* involves producing different products and should not be confused with the **division of labor**, which entails dividing the work associated with producing a given good.

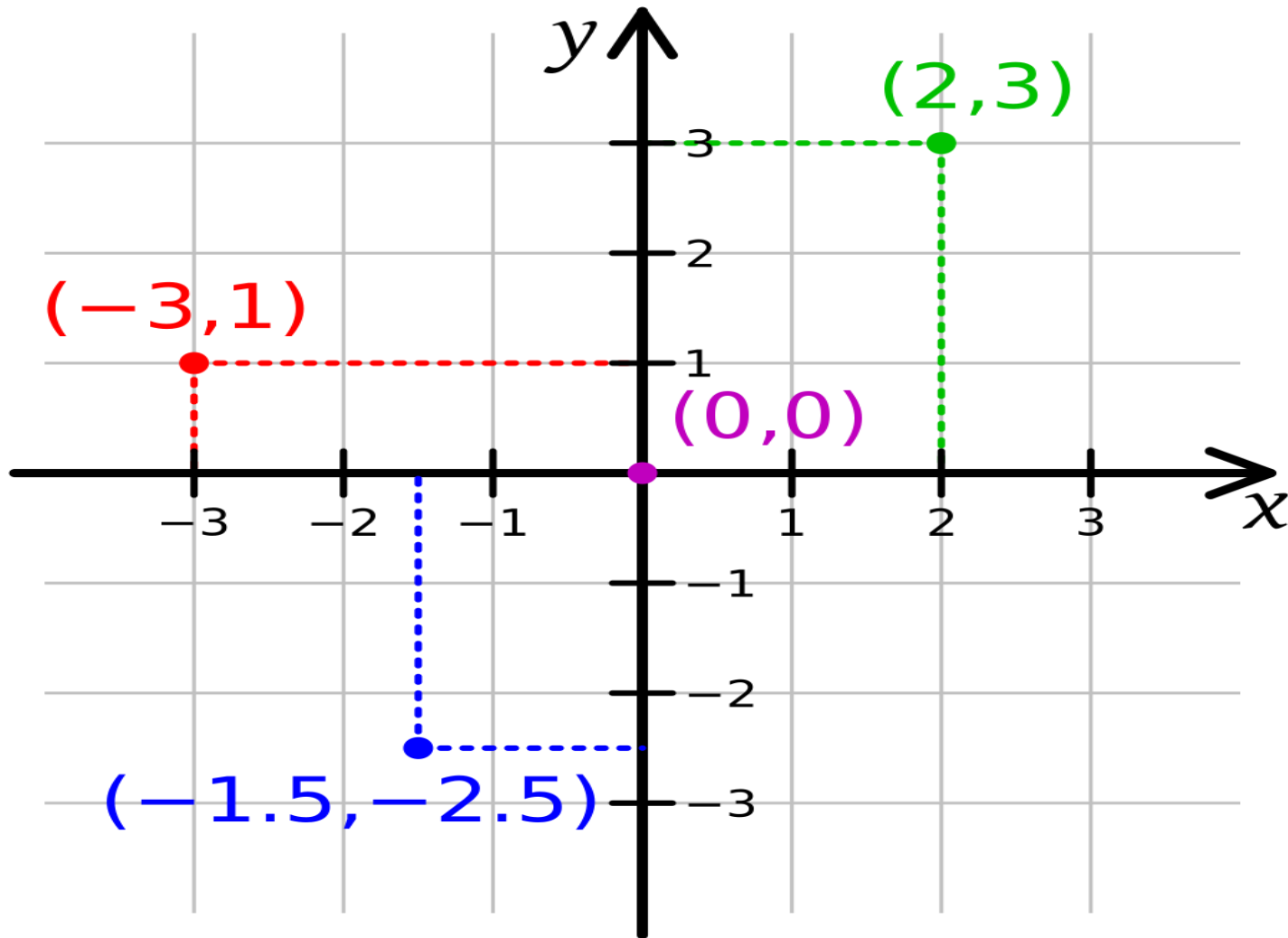
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Why Health Economics?

Cartesian Coordinates

- **Economics graphs are also based on Cartesian coordinates systems (Figure 1.) and in many cases these graphs are used as models of economic theories such as supply and demand analysis.**
- **The Cartesian coordinates system is constructed by drawing two lines (or axes) perpendicular to each other.**
- **These axes, labeled X and Y, are numbered and normally intersect at their respective zeros.**

The Cartesian coordinates system is constructed by drawing two lines (or axes) perpendicular to each other.



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Why Health Economics?

Cartesian Coordinates

- This **coordinate system** divides a space into four areas called quadrants.
- The quadrants are numbered **I** through **IV**, beginning from the northwest area and then moving in a counterclockwise direction.
- A point in any one of the quadrants is located numerically by an ordered pair, denoted **(X, Y)** .

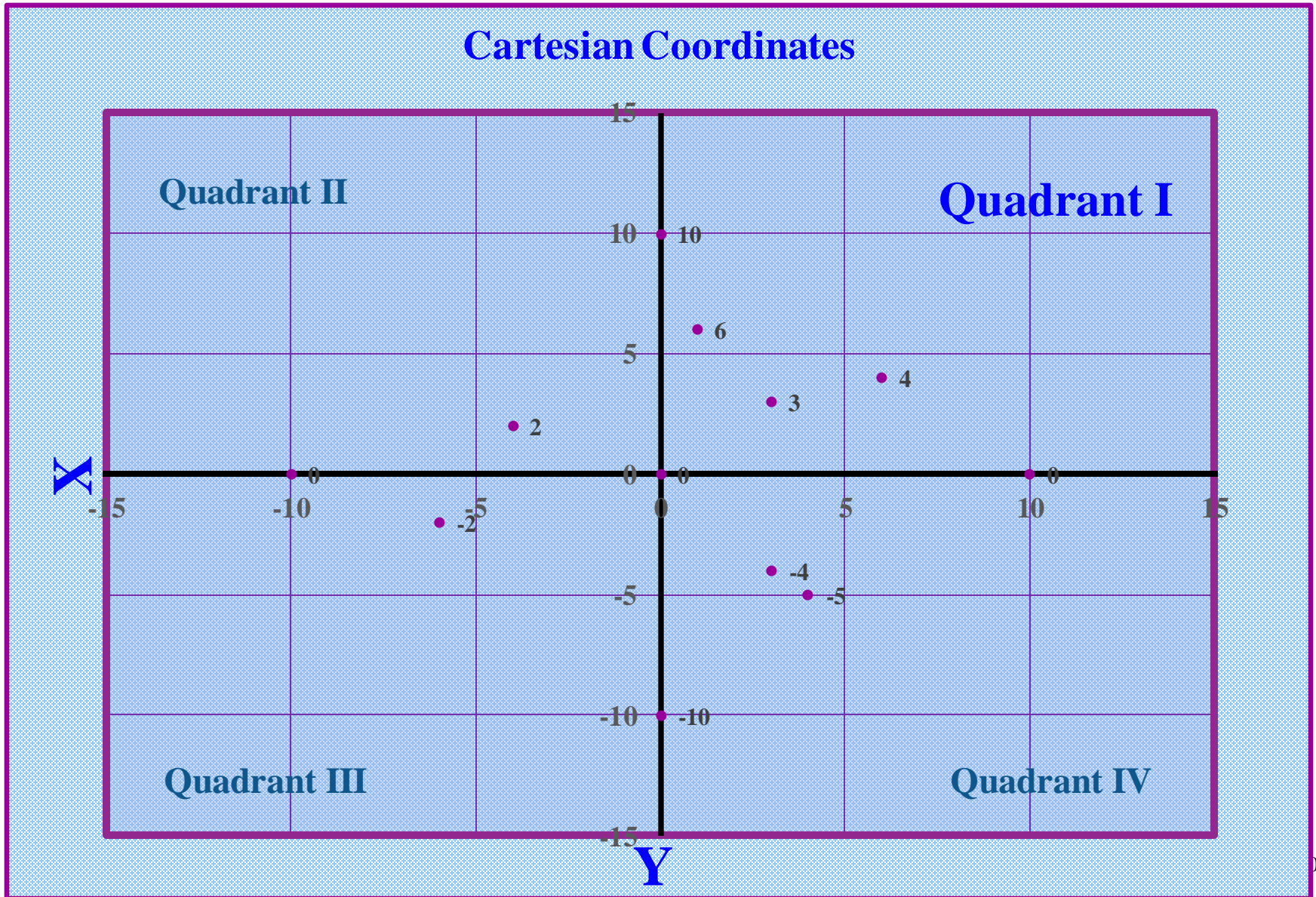
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Why Health Economics?

Cartesian Coordinates

- **Most economic analysis uses only the first, or positive, quadrant (Quadrant I).**
- **Negative values of many economic variables do not make sense; **example** of such nonsense negative prices or negative unemployment rates.**

Figure 1. Economics graphs are also based on Cartesian coordinates systems



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Why Health Economics?

Measuring the Slope of a Line

- **Many economic variables depend** on how one variable changes in response to changes in another.
- **Graphically**, such relationships are equivalent to the slope of the line depicting the association between two variables.
- **Typically**, two variables will be positively or negatively related to each other.

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Why Health Economics?

Measuring the Slope of a Line

- That is, **higher values of X** will be associated either with **higher values of Y** (a *positive relation*) or with **lower values of Y** (a *negative relation*).
- The *slope of a line* is defined as the ratio of the vertical change (*rise*) to the horizontal change (*run*) or “rise over run” (*rise/run*).

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Why Health Economics?

Intercepts

- **Economic analysis** is most easily understood if we assume that **the relationship studied is linear**, which means that a graph of the relationship has a constant slope.
- The only information we need beyond slope of the line to specify a linear relationship completely is the *intercept, which is the value of the Y variable when the X variable has a value of zero.*

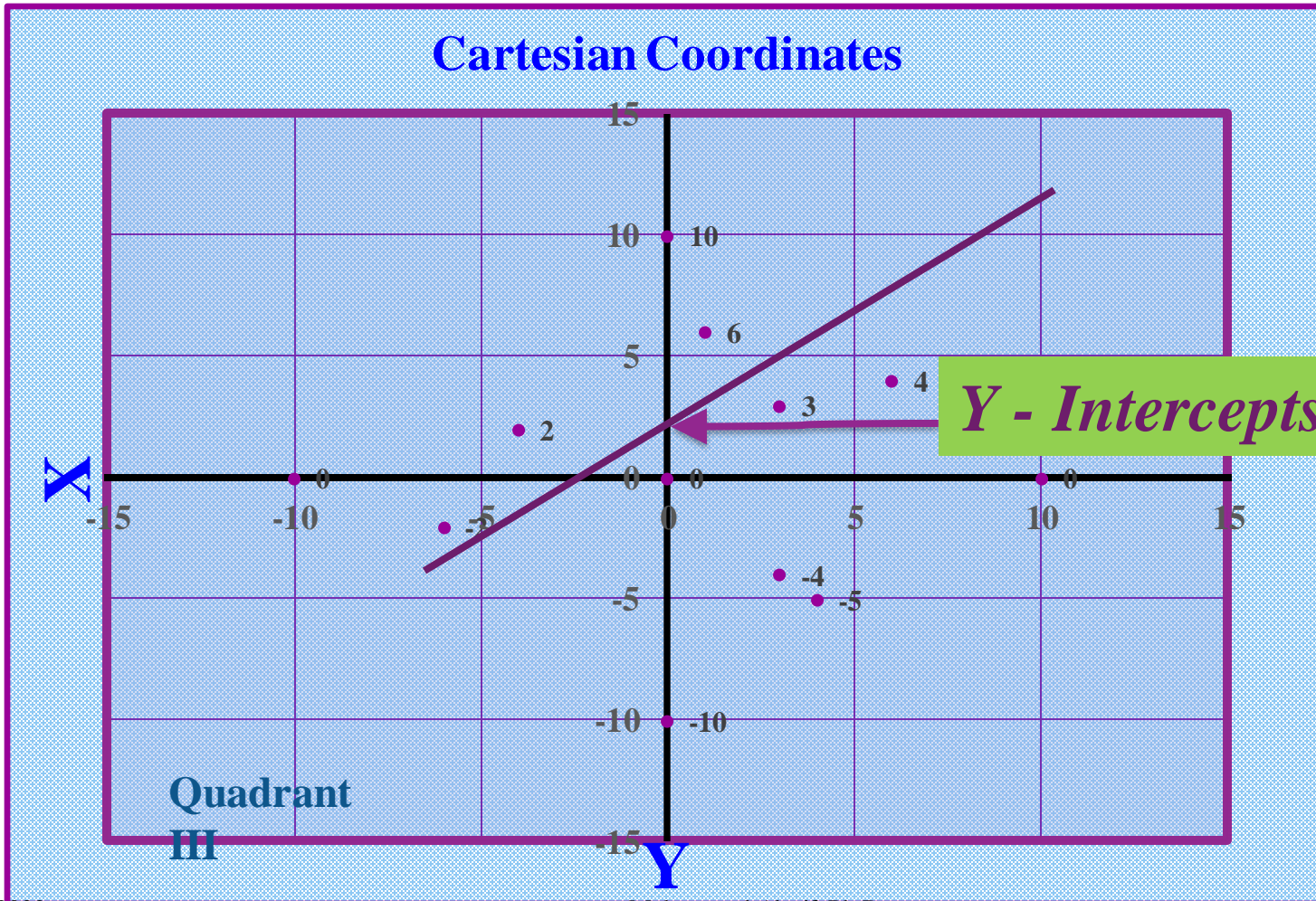
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Why Health Economics?

Linear Relationship

- *A **linear relationship** (or linear association) is a statistical term used to describe a straight-line relationship between two variables.*
- ***Linear relationships** can be expressed either in a graphical format where the variable and the constant are connected via a straight line or in a mathematical format where the **independent variable**(x) is multiplied by the slope coefficient(m), added by a constant (b), which determines the **dependent variable**.*

Figure 2. In general, linear relationships can be written algebraically as: $y = mx + b$, where y and x are the variables being considered, m is the slope of their relationships, and b is the y -intercept term.



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Why Health Economics?

Totals, Averages, and Marginal

- **In microeconomics** you will constantly encounter relationships between *total*, *average*, and *incremental (or marginal)* units.
- You probably know what *total* and *average* mean, but *marginal* may be a mystery. Just as the *margin* of a piece of paper refers to its *boundaries*, *margin* refers to “*the edge*” or the last few bits one way or another of some thing. **If you pass an exam marginally**, this means that you are close to failing.

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Why Health Economics?

Totals, Averages, and Marginal

- *Most marginal in economics refers to the ratios of the changes in one thing in response to small change in another.*
- **For example**, the *marginal utility* of an apple is the extra satisfaction derived from the consumption of an extra piece of apple, and the *marginal physical product of labor* refers to the extra output generated by the last worker added to the production process.

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Why Health Economics?

Totals, Averages, and Marginal

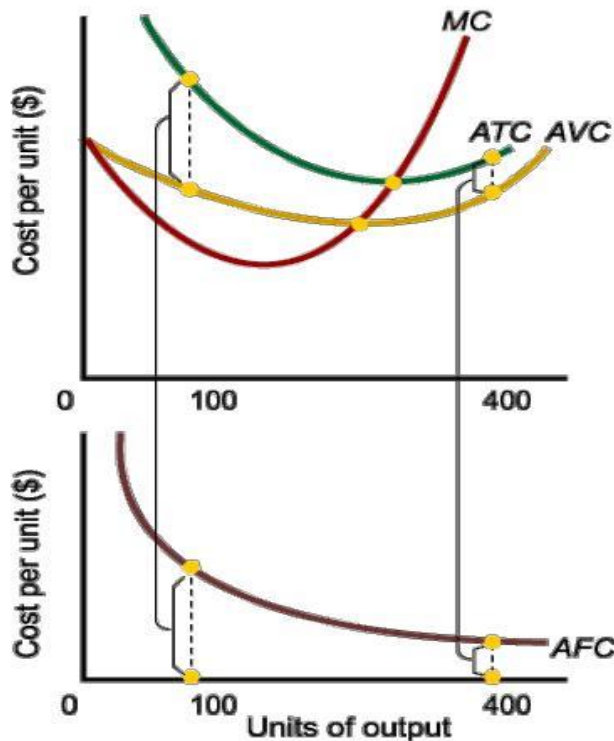
The two rules governing how marginal influence totals or averages are (Figure 3):

- 1. If the marginal unit is positive (*negative*), the total will rise (*fall*). If the marginal unit equals zero, the total unaffected.**
- 2. If the marginal exceeds (*is less than*) an average, the average rises (*falls*). The average is unchanged if the marginal equal's average.**

Figure 3. *The two rules governing how marginal influence totals or averages*

Relationship Between Average Total Cost and Marginal Cost: General Case

7.18



- If marginal cost is below average total cost, average total cost will decline toward marginal cost.
- If marginal cost is above average total cost, average total cost will increase.
- Marginal cost intersects average total cost and average variable cost curves at their minimum points.

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Why Health Economics?

Totals, Averages, and Marginal

- **Recall that the slope is defined as rise/run. For short segments of curved lines, on average, slope equals:**
$$\frac{\text{(Change in rise)}}{\text{(Change in run)}}$$
- **Thus, dividing the change in the variable on the Y axis by the corresponding small change in the variable of the X axis yields the slope of a function at a particular point. (Figure 4)**
- **This slope is the ratio of the marginal units of these variables**

Figure 4. Recall that the slope is defined as rise/run

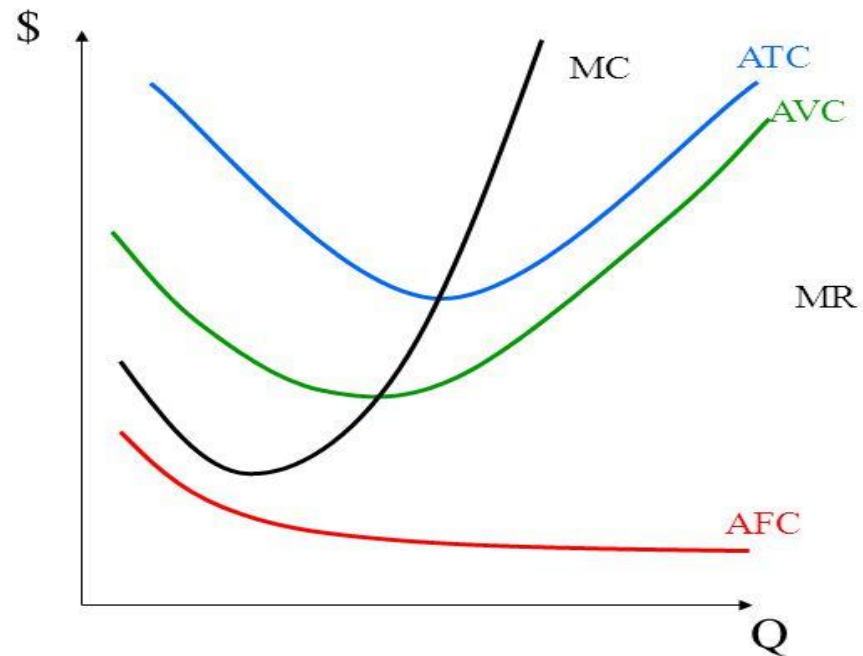
Some Definitions

Average Total Cost
 $ATC = AVC + AFC$
 $ATC = C(Q)/Q$

Average Variable Cost
 $AVC = VC(Q)/Q$

Average Fixed Cost
 $AFC = FC/Q$

Marginal Cost
 $MC = \Delta C / \Delta Q$





THANK YOU