

CHAPTER 1 LECTURE – ECONOMICS: FOUNDATIONS AND MODELS

The First Law of Economics: For every economist, there exists an equal and opposite economist.

The Second Law of Economics: They're both wrong.

Q: Why did God create economists?

A: In order to make weather forecasters look good.

People make choices as they try to attain their goals. Choices are necessary because we live in a world of scarcity.

Scarcity: A situation in which unlimited wants exceed the limited resources available to fulfill those wants.

Economics is the study of the choices people make to attain their goals, given their scarce resources.

Another way of stating this is: **Economics** is the study of how society allocates its scarce (limited) resources to satisfy unlimited wants.

We will learn how to answer questions like these:

- How are the prices of goods and services determined?
- How does pollution affect the economy, and how should government policy deal with these effects?
- Why do firms engage in international trade, and how do government policies affect international trade?
- Why does government control the prices of some goods and services, and what are the effects of those controls

We interact with one another in markets.

Market: A group of buyers and sellers of a good or service and the institution or arrangement by which they come together to trade.

Economists study these choices using economic models, simplified versions of reality used to analyze real-world economic applications.

The Use of Theories: The economic world is very complex: many economic decisions must be made and somehow coordinated. We want to develop methods to understand the mechanism that coordinates all of this economic activity: judicious simplification is required.

Economic behavior is vastly complicated, so we construct theoretical models to represent the workings of economic mechanisms. Our theories and models represent "**judicious simplifications**" of the real world.

Theories are tentative explanations of the causal relationships among variables that we observe statistical relationships among. **Models** allow us to abstract from reality and thus simplify our task. We impose assumptions that isolate the important features of reality and isolate the relationships among important variables. Our models will provide an analytical framework for thinking about economic problems. Using theories and models enables us to apply analytical precision to the study of central problems faced by every society.

WE MUST ASSUME RATIONAL SELF-INTEREST

- Economists believe that people choose options that give them the greatest satisfaction.
- This means that people:
 - use all available time and information,
 - weigh the costs and benefits of all available alternatives,
 - and choose the alternative that they believe will bring them the most benefit at the lowest cost.
- This does **not** mean that people are innately selfish. Self-interest is **not** greed.

IMPLICATIONS

- People weigh the costs and benefits of various alternatives, choosing the alternative that makes them best off.
- This behavior is called “**economic decision making**”.
- Costs and benefits are sometimes referred to as negative and positive **incentives**.

Hence **INCENTIVES MATTER**.

As incentives change, so do the actions that people will take.

Example: Changes in several factors have resulted in increased obesity in Americans over the last couple of decades, including:

- Decreases in the price of fast food relative to healthful food
- Improved non-active entertainment options
- Increased availability of health care and insurance, protecting people against the consequences of their actions

While some decisions are all-or-nothing, most decisions involve doing a little more or a little less of something.

Example: Should you watch an extra hour of TV, or study instead?

Economists think about decisions like this in terms of the marginal cost and benefit (MC and MB): the additional cost or benefit associated with a small amount extra of some action.

Comparing MC and MB is known as **marginal analysis**.

Some More Questions in Economics

In a world of scarcity, we have limited economic resources to satisfy our desires.

- Therefore we face trade-offs.
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Trade-off: The idea that, because of scarcity, producing more of one good or service means producing less of another good or service.

1. What Goods and Services Will Be Produced?

Individuals, firms, and governments must decide on the goods and services that should be produced.

An increase in the production of one good requires the reduction in the production of some other good. This is a trade-off, resulting from the scarcity of productive resources.

The highest-valued alternative given up in order to engage in some activity is known as the **opportunity cost**.

Example: the opportunity cost of increased funding for space exploration might be giving up the opportunity to fund cancer research.

2. How Will the Goods and Services Be Produced?

A firm might have several different methods for producing its goods and services.

Example #1: A music producer can make a song sound good by

- *Hiring a great singer and using standard production techniques;*
- *Hiring a mediocre singer and using Auto-Tune to correct the inaccuracies.*

Example #2: As the cost of manufacturing labor changes, a firm might respond by

- *Changing its production technique to one that employs more machines and fewer workers*
- *Moving its factory to a location with cheaper labor*

3. Who Will Receive the Goods and Services Produced?

The way we are most familiar with in the United States is that people with higher incomes obtain more goods and services.

Changes in tax and welfare policies change the distribution of income; though people often disagree about the extent to which this “redistribution” is desirable.

Types of Economies

Centrally planned economy: *An economy in which the government decides how economic resources will be allocated.*

Market economy: *An economy in which the decisions of households and firms interacting in markets allocate economic resources.*

Mixed economy: *An economy in which most economic decisions result from the interaction of buyers and sellers in markets but in which the government plays a significant role in the allocation of resources.*

This market model is based on Adam Smith and the Invisible Hand.

- Everyone—consumers, firms, resource suppliers—attempts to get the most benefits for the least cost.
- As Adam Smith noted in 1776, self-interested individuals, wholly unaware of the effects of their actions, act as if driven by an *invisible hand* to produce the greatest social good.
- *Laizze – faire*: an economic doctrine that opposes governmental regulation or interference in commerce beyond the minimum necessary for a free-enterprise system to operate according to its own economic laws.

Market economies promote:

- **Productive efficiency**, where goods or services are produced at the lowest possible cost; and
- **Allocative efficiency**, where production is in accordance with consumer preferences; in particular, every good or service is produced up to the point where the last unit provides a marginal benefit to society equal to the marginal cost of producing it.

Sources of Economic Efficiency

- Productive efficiency comes about because of competition.
- Allocative efficiency arises due to voluntary exchange.

Voluntary exchange: A situation that occurs in markets when both the buyer and the seller of a product are made better off by the transaction.

- Each transaction that takes place improves the well-being of the buyer and seller; transactions continue until no further improvement can take place.

Caveats about Market Economies

Markets may not result in fully efficient outcomes. For example:

- People might not immediately do things in the most efficient way
- Governments might interfere with market outcomes
- Market outcomes might ignore the desires of people who are not involved in transactions – ex: pollution

Economically efficient outcomes may not be the most desirable. Markets result in high inequality; some people prefer more equity, i.e. fairer distribution of economic benefits.

Market Economies and Equity

Economically efficient outcomes are not necessarily desirable.

- Less efficient outcomes may be more fair or equitable.

Equity: The fair distribution of economic benefits.

An important trade-off for a government is that between efficiency and equity.

Example: If we tax income, people might work less or open fewer businesses, but those tax receipts can fund programs that aid the poor.

POSITIVE AND NORMATIVE ECONOMICS

Positive Economics- Deals with objective or scientific explanations of the working of the economy. Emphasis here is on EXPLANATION with OBJECTIVITY.

Normative Economics - Offers prescriptions or recommendations based on personal value judgements. The emphasis here is more SUBJECTIVE, or what we think OUGHT to be.

Although the study of economics covers many different fields such as international trade, money and banking, and labor economics, to name just a few, basic economy theory can be classified into the two areas of macroeconomics and microeconomics

MICROECONOMICS or Price Theory is concerned with individual economic units such as consumers and firms.

MACROECONOMICS is concerned with the overall economy such as the effect of government spending, taxation and monetary policy.

An easy way to distinguish the two is to think of macroeconomics as the study of the forest and microeconomics as the study of the trees.

Examples of microeconomic issues	Examples of macroeconomic issues
<ul style="list-style-type: none"> • How consumers react to changes in product prices • How firms decide what prices to charge for the products they sell • Which government policy would most efficiently reduce teenage smoking • What are the costs and benefits of approving the sale of a new prescription drug • What is the most efficient way to reduce air pollution 	<ul style="list-style-type: none"> • Why economies experience periods of recession and increasing unemployment • Why, over the long run, some economies have grown much faster than others • What determines the inflation rate • What determines the value of the U.S dollar • Whether government intervention can reduce the severity of recessions

The **economic agents** of our models will include:

- A) **Consumers** who decide how much of each good they want. The strength of their demand is indicated by the price they are willing to pay. Producers respond to the price signals.
- B) **Producers** who perceive prices that consumers are willing to pay (demand) and channel resources into the production of those goods.
- C) **Resource owners** who sell their resources to producers. This yields income, so that resource ownership and prices determine the income distribution.
- D) **Government**
 - circumscribes consumer choices.
 - regulates producers.
 - modifies the income distribution.
 - provides the appropriate legal structure, infrastructure, defense system, etc.

The "Economy" or "Economic System" coordinates all of the decisions of all of these decision-makers.

FACTORS OF PRODUCTION are the inputs that produce the outputs of society. They can be broken down into the following categories:

Factor	Return
LAND - physical resources other than labor	RENT
LABOR (L) - productive ability of human beings	WAGE (W)
CAPITAL (K) - produced means of further production	INTEREST (i or r)
ENTREPRENEURSHIP -risk taker	PROFIT (π)

Some Basic Definitions

TECHNOLOGY - State of the arts regarding production.

Example: Suppose 4 units of capital and 5 units of labor are required to produce 12 units of output. An increase in technology implies 4K and 5L would now produce more than 12 units of output.

POST HOC ERGO PROPTER HOC (fallacy) - Translated from Latin as after this, because of this. This is usually a false or mistaken idea that because one event follows another, the first event has caused the second. It is important to avoid making this mistake when attempting to explain economic events.

FALLACY OF COMPOSITION (fallacy) - What is true for the individual or part is necessarily true for the group or whole. (This is an erroneous statement.)

CETERIS PARIBUS (assumption) - Translated from the Latin as all other things being equal or holding everything else constant.

NOMINAL VERSUS REAL VALUES - Nominal is defined as in name only. For example, we know the value of 10, 100 or 10,000 dollars. In Japan, if you are shown a 10,000 yen note would you know what it was worth?

Example: What about if you are in Vietnam where the currency is the dong. The exchange rate is about 1\$ = 20,000 dong. If the price of a coke is 5,000 dong, then the real value of 100,000 dong is twenty cokes. If the price of a cup of tea is 1000 dong, then the real value of 100,000 dong is 100 cups of tea.

NOMINAL INTEREST RATE VERSUS REAL INTEREST RATE - The actual return to lending (or cost of borrowing) versus the monetary return to lending (or cost of borrowing). The formula for determining the real rate of interest is:

$$r = i - p^* \quad \text{where, } i = \text{nominal rate of interest} \quad r = \text{real rate of interest}$$

$$p^* = \text{rate of inflation or expected rate of inflation}$$

Example: Imagine for a moment that you borrow \$5,000 at 10% interest for one year. After one year you pay back the original \$5,000 plus \$500, which is the interest on the amount borrowed. The nominal rate of interest is 10% or \$500. However, the real rate of interest can only be determined by taking into consideration the price of goods over the time period. For simplicity, let's assume the good we are concerned with is a cup of coffee. If the price of a cup of coffee is \$5.00 at the time of borrowing, you are effectively borrowing 1000 cups of coffee. The real rate of interest will depend on the change in the price of coffee over the period of borrowing.

Case I - the price of a cup of coffee remains constant at $P_c = \$5.00$. The individual pays back \$5,500 or the original 1000 cups of coffee borrowed, plus 100 cups of coffee. The real rate is 100 cups of coffee.

$$p^* = 0\%, \quad i = 10\%, \quad \text{given } r = i - p^*, \quad \text{then } r = 10\% - 0\% \quad \text{or } r = 10\%.$$

Case II - the price of a cup of coffee rises to $P_c = \$5.50$. The individual pays back \$5,500, but since the P_c has risen to \$5.50 the individual pays back only 1000 cups of coffee which is the original amount borrowed.

$$p^* = 10\%, \quad i = 10\%, \quad \text{given } r = i - p^*, \quad \text{then } r = 10\% - 10\% \quad \text{or } r = 0\%$$

Case III - the price of a cup of coffee rises to $P_c = \$5.25$. The individual pays back \$5,500, but since P_c has risen to \$5.25 the individual pays back a little less than 1050 cups of coffee.

$$p^* = 5\%, \quad i = 10\%, \quad \text{given } r = i - p^*, \quad \text{then } r = 10\% - 5\% \quad \text{or } r = 5\%$$

Opportunity Cost - The next best forgone alternative or the cost of resources used to produce a product. **TANSTAAFL**

Example: A ton of steel used to produce a car can no longer be used to produce two machines. Thus, the opportunity cost of producing the car is two machines.

Four topics that generate discussion and that illustrate tension between self-interest and social interest are

- Globalization
- The information-age economy
- Climate change
- Economic instability