ECON 201 - Macroeconomics
Lecture Notes 1
Metropolitan State University
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The textbooks for this course are *Macroeconomics: Principles and Policy* by William Baumol and Alan Blinder (BB) and *Eat the Rich* by P.J. O’Rourke. The O’Rourke book will only be referred to in the homework assignments and won’t be part of the regular lecture.

**BB Chapters 1-3**

Economics, most generally, is the study of how resources get allocated. Microeconomics is the analysis of behavior of individuals and firms that are trying to make themselves as well off as they can. Macroeconomics is the application of general economic principles to issues related to the performance of national and global economics.

In this section of the course, I’m going to introduce the ideas from microeconomics that will be critical to the study of macroeconomics.

**Opportunity Cost**

The opportunity cost of doing something is what you give up in order to do it. Put another way, it is the value of the next best alternative that you could have had. Think of the cost of one thing in terms of another (hamburgers in terms of beer).

For example, the opportunity cost of attending class may be a nice evening watching wrestling on TV or a nice morning sleeping in. If the opportunity cost of attending class is very high, you might choose not to attend.

The opportunity cost of taking one job is the next best job that could have been had.

Price isn’t necessarily cost. Even if you are given a ticket to an event, there is a cost of attending. It is the value of the next best thing you could have done plus, perhaps, the money you could have received by selling the ticket.

For a government, the opportunity cost of one program or project is the next best project that could have been done instead.

When considering a decision, one of the most important things to look at is the opportunity cost. What will be given up?

**Examples**

Grad school (lost wages, aspirin, psych and marriage counseling...)
Hockey game (ticket price, parking, travel time, gas or bus fare, lost voice, added cost of beer at game...)  
AIDS research (Alzheimers vs. Innoculations vs. ???)  
Opportunity cost of taking another course this quarter  
There is no free lunch (76 cent gasoline example)  
The opportunity cost of a tax cut is either what could have been done with the money or lower taxes in the future.

**Comparative Advantage and Gains from Trade**

The opportunity cost of doing one thing is what you could have been doing otherwise. In terms of production, being very good at one thing makes it very costly to do anything else. As a result, there are gains to be had if people specialize in the things they can do at relatively low cost and trade with people who have a low cost of doing other things.

Put another way, people should specialize in activities in which they have a comparative advantage.

Numerical examples

<table>
<thead>
<tr>
<th></th>
<th>Rice</th>
<th>Computers</th>
<th>Cost of 1R</th>
<th>Cost of 1C</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>20</td>
<td>4</td>
<td>1/5 C</td>
<td>5R</td>
</tr>
<tr>
<td>Japan</td>
<td>10</td>
<td>10</td>
<td>1C</td>
<td>1R</td>
</tr>
</tbody>
</table>

U.S. is low cost producer of R  
Japan is low cost producer of C

Now, say that U.S. needs 10 rice to survive and Japan needs 5 rice to survive. After that they want as many computers as possible.

Without trade:  
US  10R  2C  
Japan  5R  5C  
15R  7C.

With trade:  
US  15R  1C  
Japan  0R  10C  
15R  11C.  A gain of 4C!

Japanese farming  
Myth that self-sufficiency is good  
Economics of special interest groups – Japanese farmers and U.S. computer producers

The related idea is that voluntary trade generally benefits both parties that engage in it. There are two arguments for this. First, if trade is voluntary, unless people make mistakes, they will only agree to make the trades if they see it as being in their self-
interest. Second, trade is what makes specialization and use of comparative advantages possible.

A related idea is that the opportunity for specialization and trade is limited by the scope of the economy. That is, the larger and more diverse the economy, the greater is the opportunity for people to specialize in more and more obscure activities in which they have comparative advantage, knowing that there is likely to be sufficient demand for their output for them to earn a living. The ultimate manifestation of this is universal trade. The ultimate counter example is an economy in which individual towns are required to be self-sufficient.

In Class Exercise
Imagine that there are two people named James and Jen. The tasks they have to accomplish are cooking and typing. In a day, they each need three meals and then want to have as much typing as possible. I’ll give you the initial figures and then ask the following:
1. Calculate the opportunity cost of each activity for each person
2. Determine which person has the comparative advantage in which activity
3. Calculate how much typing each person can have if they don’t specialize
4. Calculate the gains (in terms of typing) from specialization and exchange

<table>
<thead>
<tr>
<th></th>
<th>Cooking</th>
<th>Typing</th>
<th>Cost of 1C</th>
<th>Cost of 1T</th>
</tr>
</thead>
<tbody>
<tr>
<td>James</td>
<td>12</td>
<td>18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jen</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Without trade:  
James 3C  T
Jen 3C  T
6C  T.

With trade:  
James C  T
Jen C  T
6C  T.

Marginal Analysis
One of the most important concepts in economics is marginal analysis, which basically means thinking about making decisions one unit at a time.
What is the cost/benefit from doing one more unit?

Marginal value (MV) is the value that a consumer attaches to consuming one more unit of a good given the number of units of a good that they have already consumed.

Reservation price and its relation to MV

For consumers, diminishing marginal value is the assumption
- explain why this is
- example of car tires (two interpretations: discrete and continuous)

Use MV to determine how many to consume (some numerical examples)

**EX.** Homer goes into Moe's Tavern. The price of a beer is $1.50. How many to have?

<table>
<thead>
<tr>
<th>Q</th>
<th>MV</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>2*</td>
</tr>
<tr>
<td>5</td>
<td>1  (MV of fifth beer is less than the price, don't drink it!)</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
</tr>
</tbody>
</table>

How does the answer change if, in addition to the price per beer, there is a five dollar cover charge?

This marginal value schedule can be diagrammed.

![Diagram](image)

Implications of negative marginal value
Marginal value curve is also the demand curve
You'll consume until MV falls to the price
An employer will have some diminishing marginal value for labor. As labor becomes more expensive, that employer may hire less labor and either reduce output or substitute machinery for labor.

Marginal analysis is also applicable for supplier or sellers. The standard assumption in economics is that, at some point, the marginal cost (MC) of supplying another unit of a good begins to rise. It may not be true initially, but it is likely to happen at some point. A profit-maximizing supplier will supply additional units until the marginal cost (the cost of making and selling one additional unit) rises to the price.

For example, imagine a seller with the following marginal cost schedule:

<table>
<thead>
<tr>
<th>Q</th>
<th>MC</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>$2</td>
</tr>
<tr>
<td>2</td>
<td>$4</td>
</tr>
<tr>
<td>3</td>
<td>$6</td>
</tr>
<tr>
<td>4</td>
<td>$8</td>
</tr>
<tr>
<td>5</td>
<td>$10</td>
</tr>
</tbody>
</table>

If the price for which a good might be sold is $5, this supplier will choose to sell two units. The third unit costs $6 to produce, but can only be sold for $5, so it would not be profitable to produce and sell it. If the price rose to $9, four units would be provided.

This marginal cost schedule can also be diagrammed.

When looked at in a slightly different way, the marginal cost schedule is also a supply schedule. That is, it gives the relationship between the price and the quantity that will be offered for sale.

In an economy, as wages rise, more people will seek to offer their labor to employers. When wages fall, there will be fewer people seeking work. This is why so many people apply to universities when the economy is bad.
Efficiency versus Equity
While it certainly isn’t always true, in general there seems to be a tradeoff between efficiency in an economy and equity (fairness or equality of distribution) in an economy.

For example, a tax system that took 100% of a person’s income in taxes and redistributed the wealth equally among all people would likely destroy most individuals’ incentives to work hard and be productive. It would be very equitable, but tremendously inefficient.

On the other hand, a system that levied taxes of $8,000 per person regardless of their income of wealth might be seen as very efficient (in that the tax would be easy to collect and would not distort behavior too much) but not terribly equitable.

Abstraction and Models
Economists generally operate from a few simple abstractions about how people behave. While these don’t always predict human behavior perfectly, most of the time they do a pretty good job of it and they probably predict how most of the resources in a market economy are allocated.

While these models are simplifications of human behavior, they are as useful as road maps (another type of simplified model) in analyzing and forming policy.

Many details are basically ignored (or assumed away) when they are not seen as being important to the situation to be analyzed.

A few of the basic assumptions are:
1. People demand many things, and these are usually called goods.
2. People prefer more of a good to less of it.
3. As the cost of doing something rises, people will do less of it. (The Law of Demand)
4. People are creative about finding substitutes.
5. People seek to make themselves as well off as they can.
6. People are rational and do not consistently make mistakes.

Economics is very inclusive in that it doesn’t judge any person’s preferences. It simply takes those preferences as given and then seeks to explain how they make themselves as well off as possible given their preferences.

Scarcity
Economics may be described as the study of how people deal with allocating scarce resources.
Scarcity results from several basic ideas:
1. People generally want more of any good
2. Goods exist in finite quantities

As a result, at a price of zero, people will often demand more of a good than is available. In such a situation, the good is scarce and there must be some system in place to determine who will get the scarce resources.

In a well-functioning market economy, the person who is willing and able to pay the most for a scarce good will get it. This is certainly not the only system for distribution of scarce resources.

If a market is functioning well, the scarcer a good is, the higher its price will be, so ideally prices will be an indication of scarcity.

**Production Possibilities Frontier and Economic Efficiency**

One way of representing the idea of scarcity is with a production possibilities frontier, or a diagram showing the set of goods that an economy can produce.

For simplification, this is usually done for an economy that produces only two good.

The prototypical example is an economy that produces only guns and butter:

Points inside the frontier are inefficient in that it is possible to have more of both guns and butter.

Points on the frontier are efficient in that it is impossible to get more of one good without giving up some of the other. This is sometimes referred to as *Pareto Efficiency*, a situation in which you cannot get more of one good without giving up some of another.
Points outside the frontier are not achievable.

The shape is explained by the idea that different people or resources have comparative advantage in the production of guns or in the production of butter.

An example for an individual might be the tradeoff between having leisure and having stuff:

![Graph showing the tradeoff between Stuff and Leisure]

The first few hours that you choose to work (moving left from maximum leisure) will be very productive and increase the amount of stuff you produce by a great amount. Subsequent hours of work will be less productive. To consider the extreme example, you are likely to produce very little additional stuff by moving from 167 hours of work a week to 168 hours of work a week.

An economy that is at a point inside its production possibilities frontier is not operating efficiently. That is, it is not making the most of the productive resources it have available. The book *Eat the Rich* by P.J. O’Rourke is about how countries either do or do not make the most of the productive resources available to them. In the end, how wealthy a country is seems to be much more dependent on how efficient it is rather than on the resources it has available.

Along these lines, an economy is the system by which a society decides the following:
1. What will be produced?
2. How will it be produced?
3. To whom will the good produced be allocated?

In a market economy, the goods that may be produced most profitably will be produced. They will be produced in the lowest cost way possible and will be distributed to those willing and able to pay the most for them.
As mentioned before, there are other ways of making these decisions, but they generally seem to be inferior to market economies.

The Invisible Hand
The invisible hand refers to the idea that in a market economy individuals acting in their own self-interest are most frequently guided as if by an invisible hand to also act in the best interest of society.

The best example of this may be the myriad steps necessary to get your breakfast to you. There was no central coordination, and a large number of individuals had to be very well coordinated to get your food to you, but it all happened and continues to happen very well.

Demand and Quantity Demanded
1. Downward sloping demand curve
2. Quantity demanded – if the price of the good changes, the quantity demanded changes
3. Shifts in demand – if something else changes, the demand changes
4. Why the marginal value curve is the demand curve

The standard picture is:

A change in the price of the good causes a change in the quantity demanded but no change in demand (that is, no shift in the demand curve):
A change in something else will affect the relationship between price and quantity demanded in this market and will shift demand, causing a change in demand:

**EX.** Homer goes into Moe's Tavern. Here is his marginal value schedule for beer.

<table>
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<td>5</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
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</table>

We can graph this out and think about the relationship between marginal value (the willingness to pay for one more unit of the good) and demand.
If the price of beer changes, we have movement along this demand curve.

If something else changes (the price of pretzels or the temperature, for example) then we have a shift of the demand curve.

In macroeconomics, we’ll probably be concerned about two markets, the labor market and the credit or money market.

In the labor market, the price of labor is the wage. At some prevailing wage, some quantity of labor will be demanded by employers. If the wage rises, less labor will be demanded, other things being the same. If the wage falls, more labor will be demanded, other things being the same. If employers expect to have increased demand for their products in the near future, they may respond by hiring more labor at the prevailing wage, thus increase the demand for labor.

In the credit market, the price of credit, borrowing, cash or liquidity is the interest rate. At the prevailing interest rate (if this actually means anything) some amount of borrowing will be done. If the interest rate rises or falls the quantity of borrowing demanded will change. If, however, firms’ expectations about the future change, they may choose to borrow more or less than they previously did, even at the same interest rate. This would be a change in the demand for borrowing.

**Supply and Quantity Supplied**
1. Upward sloping supply curve
2. Quantity supplied – if the price of the good changes, the quantity supplied changes
3. Shifts in supply – if something else changes, the supply changes
4. Why the marginal cost curve is the supply curve
The standard picture is:

\[ \text{Price} \]

\[ \begin{array}{c}
\text{Quantity} \\
S=MC
\end{array} \]

A change in the price of the good causes a change in the quantity supplied but no change in supply (that is, no shift in the supply curve):

\[ \text{Price} \]

\[ \begin{array}{c}
\text{Quantity} \\
S=MC
\end{array} \]

A change in something else will affect the relationship between price and quantity supplied in this market and will shift the supply curve, causing a change in supply:
For example, anything that increases the marginal cost of supplying a good will lead to a decrease in the supply of that good.

**Market Equilibrium**
Putting the supply and demand curves together in a single diagram gives us the following icon of economics:

At the equilibrium price, $P^*$, the quantity supplied is equal to the quantity demanded. Put another way, at $P^*$, the quantity that people want to buy is equal to the quantity that people want to sell.

What happens if the price is not at $P^*$?
In Class Exercise:
There are four kinds of shifts that are possible here:

1. Increase in demand
2. Increase in supply
3. Decrease in demand
4. Decrease in supply

What happens with the equilibrium price and quantity in each case?

Examples from markets relevant for macroeconomics:
labor markets
credit markets
foreign exchange markets

Price ceilings and price floors cause shortages and surpluses and lead to non-price allocation methods. These are evil.