Intermediate Microeconomics

INTRODUCTION

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The Economizing Problem

“How to reconcile unlimited human wants with limited resources?”

Choice as the solution to the economizing problem.

- Every choice has an opportunity cost.
- The *opportunity cost* is the alternative to the realized choice.
- Example: *reading about economics*: Even if your time is the only resource required, your time is scarce. The opportunity cost of reading is the alternative use of your time.
Markets

Conceptual places where individuals’ choices interact.

Trading can make both parties to the trade better off.

- My opportunity costs are affected by the other party’s valuation of the things being traded.
Example

If you have a 1978 Pontiac Trans Am and I have a new Harley Davidson motorcycle, I will trade you the motorcycle for the Trans Am.

◦ Because I really like Trans Ams.
◦ If you like motorcycles more than Trans Ams, you will agree to the trade.

We are both better off because we now have something that we like more than what we had originally.
Markets

In our example, you might say that the price of a new motorcycle is one Trans Am.
- Fortunately in most market transactions we don’t have to resort to the barter system.
- We have a medium of exchange called “money” that enables us to trade money for Trans Ams and subsequently money for motorcycles.

The basic functioning of markets does not differ much, however, from this example.

The interactions of buyers’ and sellers’ through markets determine prices for scarce resources.
Price has 3 functions

1. Ration demand,
2. Signal producers of a good to produce more or less of the good,
3. Signal producers to enter or leave the market.
Price rations demand

The most basic of these functions is rationing demand.

- Price determines who values the good highly enough to get it and who does not.

This is how markets resolve the problem of scarcity:

- They create prices that allocate scarce goods to the people that value them most.
Microeconomics

“The study of the economic choices individuals and firms make and of how these choices create markets.”

In addition to the creation of markets, we will also study their resulting allocations.

- The market allocations will be evaluated according to how “well off” they make the people that participate.
- This subject is called welfare economics.
Models

This is where all the functions, algebra, and calculus from the math review come in handy.

Economists use all that stuff to generate testable predictions that they can use observational data to test.

- The crucial latter part (testing) of this procedure is the domain of econometrics.
- The first part (modeling) is what we concern ourselves with in a theory class like this one.
“Economists do it with Models”

... mathematical models, that is.

Economic modeling means making assumptions about relevant human behavior and formalizing the assumptions into functions.
Example

The Law of Demand states that as the price of a good increases, consumers will demand less of the good.

To formalize this well-tested assumption, economists typically formalize it into a Demand Function, such as:

\[
\text{Quantity Demanded } \equiv Q = a - b\text{(price)}
\]

This example is the linear downward-sloping demand curve with which you are familiar from 251.
Modeling is Unrealistic

Duh.

But models are also useful.

A real economy is a complicated thing that *needs* to be simplified to study it meaningfully.

Models deliberately make unrealistic assumptions that simplify human behavior.

Because of these simplifications, we can look at specific relationships and make clear conclusions about them.

If the predictions of the model are confirmed by observing reality, the model is still useful in explaining behavior despite simplifying assumptions.
A Final Word About Modeling

Economics is a social science.

Natural scientists have laboratories where they can control the environment explicitly and conduct experiments.

Usually social scientists cannot do this.

- Economists have to resort to statistical analysis that mimics the controlled environment of a lab as closely as is possible.

This is one reason economics relies so heavily on mathematical models and statistics.

Also don’t forget what Alfred Marshall said about solving economic problems: (paraphrasing) translate the problem into mathematics, solve the problem, translate the solution into English, and burn the mathematics.
The preceding distilled into a concise list of principles

1. Resources are scarce.

2. Scarcity involves opportunity costs.

3. Incentives matter.
And two more not espoused earlier

4. Inefficiency involves real costs.

5. Whether markets work well or not is important.

The last two remind us that failing to allocate resources efficiently is not just a theoretical notion.

It means an unnecessary reduction in somebody’s standard of living.

A reason for studying economics suggests itself: to overcome inefficiency with economic reasoning and maximize the well-being of our species.
A schematic history of Microeconomics

Outline:

1. Adam Smith and a labor theory of value.
2. David Ricardo and diminishing returns.
The Diamonds and Water Paradox

Why is the price of diamonds higher than the price of water?

The labor theory of value would state that, since it takes more effort to find diamonds than it does to find water, diamonds’ high price reflects the disparity in effort (labor) involved in producing them.

- This is the explanation offered by the first modern economist, Adam Smith, circa 1776.
Refinement: diminishing returns

Whether you recall the details or not, diminishing returns is the explanation for why supply curves slope upward.

◦ The idea was suggested by David Ricardo in 1817: *On the Principles of Political Economy and Taxation*.

According to diminishing returns, the *productivity* of labor decreases as the *amount* of labor increases.

◦ Consequently it becomes progressively more difficult (and costly) to produce goods the more of the good you produce.
Price with Diminishing Returns to Labor

Looks a lot like a supply curve, right?
Marginalism

As it turned out, the labor theory of value could not explain the entire discrepancy between the prices of diamonds and water.

- 18\textsuperscript{th} Century economists had the Law of Supply down pat, but missed the Law of Demand.
- Alfred Marshall’s 1890 *Principles of Economics* embodies the contribution of Demand to theory of value.

The basic story is:

- most people already have a lot of water, and they just don’t value the *marginal* unit very much.
- Conversely most people do not consume a large quantity of diamonds, so they value the marginal diamond highly.
Supply and Demand

The combination of supply and demand create a high price and small quantity.
Supply and Demand

The combination of supply and demand create a low price and large quantity.
What makes something Economics?

The goals of economics are not very different from other social sciences.

◦ All are concerned with explaining human behavior.

The difference is that economics relies heavily on constrained rational decision making.

◦ We have already established that individuals’ decisions are constrained by scarce resources.

◦ Considering their constraints, economists further assert that people make choices that are rational.
Rationality

This theory class will investigate economic modeling and models’ assumptions.

So it is a convenient chance to explain one common feature of the economic models you will encounter in this class: rationality.

Rational agents have well-defined objectives that they attempt to satisfy as well as possible, given the constraints (scarcity).

- Economic models make (sometimes dubious) assumptions about agents’ objectives, but never abandon the assertion of rationality.
Rational choice

Agents *in economic models* pursue their objectives rationally by solving a constrained optimization problem.

- This tells them the choices to make that will accomplish their objective as amply as possible (again, given the constraints).
- Their optimal choices impact other agents’ constraints.

The final component of economic models is *equilibrium*: what happens when all agents make rational choices simultaneously?
What’s so great about rationality?

Example: Attending a Rosie O’Donnell comedy performance.

- An observer might be tempted to conclude that anyone subjecting themselves to the pain that is watching this woman attempt to be funny cannot possibly be rational.
Failure to understand=“irrational”?  

But dismissing it as *irrational* opens the door to classifying all behavior that one doesn’t readily understand as irrational.  
- Sure it makes the observer feel smug because he is not irrational, but then he misses a chance to learn about interesting behavior.

The alternative is a commitment to treat all behavior with the intellectual curiosity that asks,  
- “according to what objective *would* this be rational?”

If you abandon rationality, you miss valuable opportunities to learn . . . in this case, the mind-blowing possibility why some people enjoy watching Rosie O’Donnell do stand-up comedy.
Rationality, Consumer Choice

Other alleged “irrational” examples:

- smoking,
- playing the lottery,
- charitable donations,
- crime,
- using credit cards, et al.

Because it asserts rationality, economic theory has done an excellent job of explaining all of these phenomena and many more.
Rational Consumer Choice

Next, the first model we discuss is the general objective that consumers pursue in economics: **utility maximization**.

This subject will be the focus of the class for the next several weeks.