The Concept of Demand

The Demand for Goods and Services
Objective:

To determine how people respond to price changes over time with respect to commodities and factors of production.

We will be dealing primarily with the commodity markets, but we will look at a few factors of production as well.
MORE PREFERRED RATHER THAN LESS

Remember that most people prefer more rather than less economic goods and services;
and that we will probably never reach the point in our lifetime at which so many goods and services are produced and distributed that no one wants more.
Rational Behavior

We must manage our limited incomes so that we satisfy as many wants as possible,

or satisfy those wants having the highest priority.
Rational Behavior

1. It is irrational to spend money indiscriminately and without any attention to the limitations of our incomes.

2. It is prudent to carefully consider alternative ways of spending our limited incomes consistent with maximum satisfaction (UTILITY).
The statement made above is a pretty strong statement isn’t it? Well, what if I were to pass away tomorrow (I hope not), is there a substitute for Herman Arthur Sampson III? It is not at all empowering to think about it, but realistically, YES! There are probably tens of thousands of substitutes for good ‘ol Herm. There would be someone else teaching this class within a few days if not the very next day. My wife may find a substitute one day. My son and daughters will probably find a substitute as well.

I am sure some of you know of a person who discusses their work and emphasizes how they are indispensable. As if the business would not survive if they left. Well, I am here to tell you that 99.99% of the time that is not true. We have heard how autoworkers are the backbone of America, steel workers are the backbone of America, farmers are the backbone of America, teachers are the backbone of America, etc. etc. America must look rather peculiar with all those backbones. Fact of the matter is, there are fewer autoworkers, steel workers and farmers in America now than years past. Capital was substituted for these workers as wage rates increased. Teachers are wondering about technology such as the web substituting for some of their services. A Honda made in Japan is a substitute for a Ford made in the U.S. Soybeans from Brazil are a substitute for soybeans grown in the U.S. At some price, people will turn to substitutes.
SUBSTITUTES:

1. This sacrifice is measured by PRICE

2. Intelligent choice among substitutes requires a balancing of additional costs against additional benefits.

Marginal Cost vs. Marginal Revenue
Many of us even think of a motor vehicle as a necessity in this day and age. But what do we REALLY NEED? If you think about it, not much. Try to think of the difference between a need and a want by asking yourself if you will die if you do not have the commodity. Yes, die. Let us take a look at food. We need food and water to sustain our bodies. But, do we need a rib-eye steak? No, we do not need a rib eye steak. We need calories, protein (amino acids), minerals, vitamins and water. We can meet our nutritional needs with a very limited diet and survive. We do not need highly processed frozen food products that pop in the microwave and result in an instant meal.

We need some clothing if we are going outside on a blustery January day in North Carolina. But, do we need a Carhart jacket? I don’t think so. We want a Carhart jacket, we don’t need it.

We need some shelter from the elements, but a 3000 square foot brick ranch on 2.5 acres is not a need. It is a want. A single wide trailer will suffice. Heck, a 12 foot by 12 foot log cabin chinked with mud worked well for many American pioneers facing harsh winters across the upper mid-west. The Plains Indians made do with buffalo hide teepees.

A motor vehicle? Is it really a need?
We hear politicians and citizens proclaim all the time that we need clean air. How much are you willing to pay for “clean” air? We need quality medical care! How much are you willing to pay? Young people need a formal post-secondary education! How much are you willing to pay? We need enhanced personal safety! How much are you willing to pay? How much freedom are you willing to sacrifice in the name of personal safety?
How “clean” is the air now? What will it cost to have cleaner air? How good is medical care now? What will it cost to have better medical care? I think you are getting the idea. And I think that at some defined cost for each of these items, some of us may prefer something else. What if it was going to cost each of you an additional $1,000 per year to have cleaner air to breath, how many of you would choose cleaner air?

We all WANT these things, but at some cost we will clearly differentiate between a NEED and a WANT. We all NEED a lot of things when someone else is footing the bill. When we have to bear the brunt of the cost for things, it is amazing how needs change.

I have a 5 year old son at the time of this writing. From his perspective, he has needed everything when visiting WalMart or the grocery store. We are trying to teach him about prices and money at this time. It has been amazing how his perspective and attitude has changed when confronted with a budget constraint and given the responsibility to allocate his own monetary resources across his many “needs.” He does not “need” as much stuff when he is spending his own money. Now, we are not ready to turn him lose on the world of high finance yet; but it is amazing to me how even a five year old reacts to their wants when faced with bearing the cost of those wants. I have learned that I get out of WalMart and the grocery store with more money in my back pocket if I give the young man a dollar and let him allocate the funds himself.
Well, for “food” in general probably not. But remember that “food” is made up of a large variety of food items. Remember, we need calories, protein (amino acids), minerals, vitamins, and water.
I hear students saying they need better food at the University Dining Hall. The food there supplies all your basic food needs, and then some. I see a large percentage of students gain weight on the food served at the University Dining Hall. That would indicate that the food served there surpasses the food needs of those individuals. Students actually want better tasting food, they don’t need it. How much are you willing to pay for better tasting food?
Here is where we get into the many food items that are available to us, and recognize that as we more narrowly define a food item, the number of substitutes for it increases.
IMPORTANT NOTE

As we more narrowly define a commodity, the number of available substitutes increase!
*Gasoline Example:*

How many substitutes are there for gasoline?

How many substitutes are there for a gallon of premium unleaded at the BF station on Hillsborough Street?
At the consumer level

- What are the substitutes for beef?
  Do we need beef?
- What are the substitutes for rose bushes?
  Do we need rose bushes?
- What are the substitutes for potatoes?
  Recent TV ads would suggest “Stove Top Stuffing”
  Do we need potatoes?
Personal preferences or your “degrees of want.” What multi-billion dollar industry in the U.S. focuses on affecting your personal preferences or “degrees of want?” C’mon now, think. What are you exposed to virtually everyday? That’s right. The advertising industry. Constantly at work trying to raise your degree of want for one product or service versus another. Some ads try to steer you away from a price while others try to focus on the price. Some ads even go as far as to relate the concept that you should not worry about the price because “you deserve it.” Giving yourself a “treat” may feel good today, but it won’t feel good all those months you are paying it off.

So, please choose from among the varying alternatives based upon your personal preferences AND the associated prices of the alternatives you confront.
When making a decision, look at the additional expected costs and additional expected benefits of the alternatives that you are assessing. Gather information on which to base your analysis and formulate your decision. You will probably never have what could be termed “perfect information”. You will probably always make some decisions with some uncertainty. The trick is to gather enough information to make the best decision possible. How much information should you gather? Well the rule of thumb is to gather information up to the point that the additional cost of acquiring more information is just equal to the additional benefit of the acquired information. Sounds rather vague I know. Well, when you are in the grocery store in the check out line staring at that Snickers bar at the candy counter, how much information do you gather when making the decision to buy or not? Not much right? Maybe just the growl in your stomach is all the information you need. What is the price of that candy bar? How much information do you gather about a particular motor vehicle before you purchase it? What is the price of a motor vehicle these days? How much information do you gather about a house before you buy it? Do you agonize over such a large purchase? Do you wonder if you are doing the right thing (second guessing yourself)? As the commodity’s price increases, the value of obtaining information about the commodity before transacting any business increases as well.
When do we stop gathering information?

The more relevant information a rational consumer or producer collects,

The better will be the decisions they make, on average, in general.
When do we stop gathering information?

At some point however, consumers and producers must address marginal analysis:

At what point does the marginal cost of acquiring additional information exceed the marginal benefit of acquiring additional information?
THE DEMAND CURVE

Demand Curve

Price

Quantity demanded per unit of time
The Demand Curve

Y AXIS = the sacrifices that must be made to obtain a commodity
- price

X AXIS = the QUANTITY DEMANDED per unit of time
Definition of Demand

The willingness and ability of buyers to purchase a given amount of goods or services, over a range of prices, over a given period of time.

The relationship of the quantity of a good that will be bought at various prices can be presented in the form of a demand schedule or portrayed graphically as a demand curve.
Definition of Demand

OR

The relationship showing the various amounts of a commodity that buyers would be willing and able to purchase at possible alternative prices during a given time period, all other things remaining constant.
Quantity Demanded \((Q_d)\)

The specific amount of a commodity that people are willing and able to buy at a PARTICULAR (specific) price, during a given period of time.
Income is a flow variable. In other words we typically receive our income over time.

Wealth is a stock variable. It is a measure of our net worth (assets minus liabilities) at a particular point in time.
Quantity Demanded ($Q_d$)

A change in quantity demanded is represented by a movement along the existing demand curve.
Law of Demand:

Principle stating that as the price of a commodity increases, the less consumers will purchase per unit of time, ceteris paribus.

As price decreases, the quantity demanded increases per unit of time, ceteris paribus.
Law of Demand

\[ \uparrow P \implies \downarrow Q_d \text{ c.p.} \]

\[ \downarrow P \implies \uparrow Q_d \text{ c.p.} \]
MINIMUM WAGE LAWS: A practical example

Assume the minimum wage is $4.25 per hour and the government proposes to increase the minimum wage to $5.25 per hour.

This means that employers must pay an additional $1.00 per hour, plus?
MINIMUM WAGE LAWS:
A practical example

What do NC employers do?

1. Will they decide to hire fewer people?

2. Will they substitute toward less expensive inputs?
MINIMUM WAGE LAWS:
A practical example

Demand for Minimum Wage Workers
By Employers of Minimum Wage Workers

Labor Demand Curve

Wage

Quantity of Labor

2400 2500

5.25
4.25
**Minimum Wage Workers**

Research evidence shows that an increase in the minimum wage does cause some unemployment.

That unemployment however is concentrated among teenage (16-19 years) workers
Effect of Min. Wage Increase

It is estimated that a 10 percent increase in the minimum wage will reduce teenage employment by 1 to 3 percent.

Young adults (age 20 to 24) are less affected; a 10 percent increase in minimum wage results in unemployment of 1 percent or less.
An Increase in the Min. Wage?

President Clinton (1995) has proposed a 90 cent increase in the minimum wage ($4.25 to $5.15) over a two year period.

From $4.25 to $4.75 the first year, and (October 1, 1996)
From $4.75 to $5.15 the second year. (September 1, 1997)
Historical Minimum Wage Data

The Federal Hourly Minimum Wage
Since Its Inception

http://www.dol.gov/whd/minwage/chart.htm
To Read More on the Min. Wage

Read page 133, (M&B), 14th: Minimum Wage

Read page 314, (M&B), 14th: The Minimum Wage Controversy

These readings are a little advanced for where we are at this time.
Machinery & Equipment Dealers?

What have machinery and equipment dealers done whenever the minimum wage was increased?

\[ P_{\text{output}} \]

\[ EE_{\text{Labor}} = PE_{\text{Labor}} \times \downarrow \Rightarrow \downarrow EE_{\text{Labor}} \]

\[ \uparrow \]

\[ P_{\text{Labor}} \]
Inflation and Relative Prices

Many people often argue with economists that the law of demand is wrong!

These people, however, have forgotten to take inflation into account!!
1. The inflation of the late 70's and early 80's in the US resulted in apparent price increases.

2. Many of these price increases were not real increases at all.
Inflation is an increase in the general price level or an increase in the average money price of goods and services and is usually measured by the CPI.
More Information on the CPI

CPI information

http://stats.bls.gov:80/cpihome.htm
1. If the price of all items double, including human labor, management, land, and capital items, then no good would have changed in real price.
2. Therefore, doubling of the price of gasoline will not necessarily induce people to use less gasoline if at the same time incomes and all other prices also double.
3. All money prices do not change in equal proportions.

This is one reason why inflation can be a big problem.
If the price of beef increases 10%, and the average of all other prices increase 10%, then the price of beef did not increase relative to all other prices.

The real price of beef is unchanged.
IN THIS COURSE, WHEN THE PRICE OF A COMMODITY IS SAID TO INCREASE, WE ARE ASSUMING THAT THE PRICES OF ALL OTHER GOODS AND SERVICES HAVE NOT INCREASED, THEY REMAIN UNCHANGED (ceteris paribus).
Therefore, we are looking at the price change of a commodity

RELATIVE to the price of another good or service, OR to an index of all other prices!
Relative Price:

is the price of any item compared to the price of other commodities, or relative to an average (or index) of all other prices in the economy.
**Nominal Price:**

the price paid in dollars for a commodity at a particular point in time.

The Current Sticker Price

The price you and I pay in current dollars for any commodity at any point in time are called nominal prices.
Consumer buying decisions are dependent upon relative price.

NOT Nominal Prices

Consumers observe nominal prices, but base buying decisions on relative prices
### An Example:

<table>
<thead>
<tr>
<th>Nominal Price</th>
<th>Relative Price</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Price</td>
<td>Price</td>
</tr>
<tr>
<td>3 yrs ago</td>
<td>today</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Hamburger</td>
<td>$1.00</td>
</tr>
<tr>
<td></td>
<td>$3.00</td>
</tr>
<tr>
<td></td>
<td>$1.00 / $ .50 = 2</td>
</tr>
<tr>
<td></td>
<td>$3.00 / $2.00 = 1.5</td>
</tr>
<tr>
<td>Hot dogs</td>
<td>$.50</td>
</tr>
<tr>
<td></td>
<td>$2.00</td>
</tr>
<tr>
<td></td>
<td>$.50 / $1.00 = .50</td>
</tr>
<tr>
<td></td>
<td>$2.00 / $3.00 = .67</td>
</tr>
</tbody>
</table>
## An Example Using the CPI

<table>
<thead>
<tr>
<th>Nominal Price</th>
<th>Relative Price</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Price</td>
<td>Price</td>
</tr>
<tr>
<td>3 yrs ago</td>
<td>today</td>
</tr>
<tr>
<td>Hamburger</td>
<td>$1.00</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Average of</td>
<td>149.7</td>
</tr>
<tr>
<td>prices in the</td>
<td></td>
</tr>
<tr>
<td>economy (CPI)</td>
<td></td>
</tr>
</tbody>
</table>