

Lesson 1 - Introduction to Economics and PPC

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Section 1 - What is Economics?

“There is a time and season for all our decisions. Make sure you make decisions in the proper time and season. All of these life-altering decisions will be made in a very busy, relatively short period during your 20s--during what I call the ‘Decade of Decision.’”

Robert D. Hales, “Preparing for the Decade of Decision.”
Ensign, May 2007



What is Economics?

The term economics often brings to mind visions of equations, charts, and statistics. While each of these tools is useful, economics studies the decisions people make.

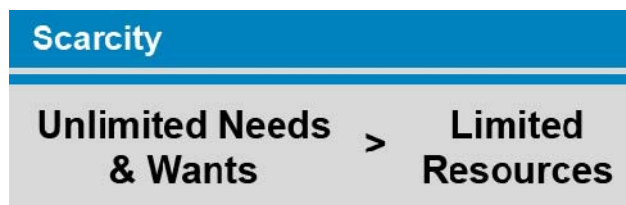
Even before we were born, we faced choices. The war in heaven was fought over agency or the ability to choose (see Moses 4:1-4). We face decisions daily: including what to have for dinner, what career to pursue, and whom to marry. Some decisions have eternal consequences while others are of lesser importance.

Although we are free to choose, we are not free to choose the consequences. Thomas S. Monson taught: "Decisions determine destiny. That is why it is worthwhile to look ahead, to set a course, to be at least partly ready when the moment of decision comes. (Thomas S. Monson, “Life's Greatest Decisions,” CES Fireside, Sep. 7, 2003).

Economics studies how individuals, businesses, and societies allocate their scarce or limited resources among competing alternatives to reach their desired goal or objective (e.g., maximize one’s satisfaction or profits) and the consequences of those decisions.

Economics provides a framework and a set of tools that can help individuals make better decisions in their work and personal life.

Scarcity



With each decision we face trade-offs, because something must be sacrificed or given up whenever a choice is made. **Scarcity** is the reason why we must make decisions; we have unlimited needs and wants but only limited resources. Resources spent on one activity cannot be spent doing something else. For example, taking the next hour to study economics prevents us from using that hour to study another subject, work, sleep, etc.

Likewise businesses and government face trade-offs. How should a business spend their money to best meet the goals of the firm? How should the government allocate the generated tax revenues to address the demands of it's citizens?

Even the Church leaders must decide how to use Church resources – should they build another temple or church house, use the funds for missionary work, or further the humanitarian effort?

Price Reflects Scarcity

In a market economy, price reflects the scarcity of a good or service. If at a zero price, the quantity demanded (what people want) exceeds the quantity supplied (what is available), then the good or service is said to be scarce. In a market economy for traded goods and services, the more scarce the item the higher the price.

Since every choice made involves a trade-off, it also has a price. Something must be sacrificed in making the decision. Keep in mind that the price paid may or may not be in monetary terms. Pres. James E. Faust taught: "My dear young friends, there is another great truth that you young men must learn. It is that everything has a price. There is a price to pay for success, fulfillment, accomplishment, and joy. There are no freebies. If you don't pay the price that is needed for success, you will pay the price of failure. Preparation, work, study, and service are required to achieve and find happiness. Disobedience and lack of preparation carry a terrible price tag." (James E. Faust, "The Devil's Throat," Ensign, May 2003, 51).

Consider some examples of the way the price of a good changes as it becomes more or less scarce. For example, freezing temperatures in Florida will raise citrus prices. The cost for a 30-second advertisement slot during the Super Bowl now costs more than \$2.5 million. Can you think of other examples?

Ponder and Prove - Section 1 - What is Economics?

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Section 1 Questions

Instructions: Click on the button that represents the correct answer. After you select an answer, click on the 'Grade My Answer' button.

Question 1
Question 2
Question 3
Question 4

Scarcity exists primarily:

Because monopolies limit supply and drive prices higher.

Because people's wants exceed the amount of resources available to fulfill those wants.

Because of high levels of unemployment in the economy.

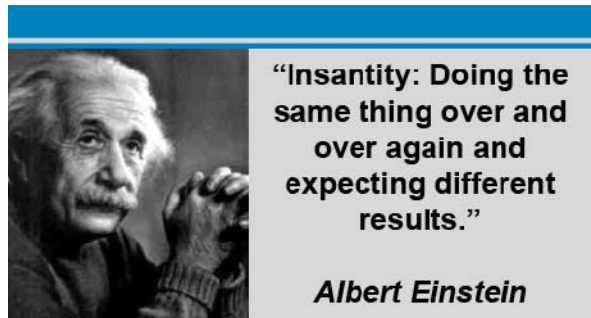
Because of a reduction in federal expenditures.

Grade My Answer
Reset

"Results"

Original source code for problem above from Craig Bauling. Modified by David Barrus

Section 2 - Guidelines to Thinking Like An Economist



Just as learning a foreign language requires one to learn a new vocabulary- economics has its own language and way of thinking. Many of the problems and decisions we will face in life we have not previously encountered. For this reason, economics is a powerful tool, since it provides the framework for how to solve problems. The basic steps in the decision making process are:

- 1) Determine the goal. What is it that you are trying to accomplish?
- 2) Determine the possible alternatives or choices.
- 3) Determine the limitations or constraints.
- 4) Evaluate the alternatives and select the best alternative given the limitations that exist.

For example, a student is trying to determine a major. **1)** The goal for the student is to determine what type of career or lifestyle the student desires, which may include factors such as the amount of income in that career, the type of work, how the student can make a difference in the world, the required hours, or the location of the employment. **2)** Once that goal is determined, the student then evaluates the majors that are available and the career paths that each

major will prepare the student to pursue. **3)** The student then evaluates the limitations which may include personal abilities or the ability of the major to prepare the individual for the desired career. **4)** The student then selects the major that will best prepare him or her for the desired career given the limitations that exist.

In studying the decisions made by individuals, the following guidelines are useful when thinking like an economist.

- 1. Every decision has trade – offs.**
- 2. Individuals rationally pursue self – interest and respond to incentives.**
- 3. In order to make rational decisions, relevant opportunity costs must be identified.**
- 4. Compare the marginal benefits to the marginal costs.**
- 5. Consider the secondary effects.**

We will now consider each one of these guidelines in depth.

1. Every decision has trade-offs

“The Spirit has taught that Satan doesn't have to tempt us to do bad things, he can accomplish much of his objective by distracting us with many acceptable things, thus keeping us from accomplishing the essential ones. We need to frustrate that distraction by identifying what is critically important in our lives. We must give the cream of our effort to accomplish those things. Where there is limited time or resources, this pattern may require that some good activities must be set aside.”

Richard G. Scott, “To Learn to Teach More Effectively,” BYU Devotional, Aug. 2007

First, every decision has **trade-offs**. Because scarcity exists, we have to decide what is the best use of our limited resources, and what we must sacrifice or forego. Properly identifying the trade-offs of each decision helps the decision maker to make better choices. With each choice there is something we must give up.

2. Individuals rationally pursue self-interest and respond to incentives.

Second, individuals rationally pursue **self-interest** and respond to incentives. In economics, we assume that people act rationally, that people weigh out the benefits and costs of each decision to the best of their knowledge. Given that information is often incomplete, rational choices depend on the perspective, as well as the preferences of the decision maker. In Proverbs 12:15 we read: “the way of a fool is right in his own eyes.” As a result, what may seem rational to one individual may be considered irrational by another. Still, assuming rationality is useful in explaining how individuals make choices because rationality suggests that people respond to incentives. That means individuals will make different choices when circumstances (or incentives) change.

Incentives come in various forms. The stick approach provides a punishment for inappropriate behavior. The threat of a ticket or jail discourages individuals from undertaking certain activities. On the other hand, the carrot approach offers a reward for a particular choice or behavior. This is exemplified by parents who reward children for good behavior.

Adam Smith, who is considered to be the father of modern economics, wrote a book in 1776 entitled the *Wealth of Nations*. In it, he talked about how people act in their own self-interest. A baker does not get up early each morning to bake bread solely because of his love for his fellow man, but because by making bread he earns an income which allows him to provide food, clothing, and shelter for his family. Each person acting in their own self-interest provides the goods and services we desire in our economy. Consequently, government does not need to dictate what businesses should produce because each person acting in their own interest in turn promotes the best interest of society – as if led by an invisible hand. Each individual, seeking only his own gain, “is led by an **invisible hand** to promote an end which was no part of his intention,” that end being the public interest. “It is not from the benevolence of the

butcher, or the baker, that we expect our dinner," Adam Smith wrote, "but from regard to their own self interest." (Reference: <http://www.econlib.org/Library/Enc/bios/Smith.html>)

A common misconception is that self-interest means greedy. Acting in one's self-interest means pursuing those activities that bring the greatest joy or satisfaction to an individual, which may actually include service or philanthropic acts. While these do not increase the financial status of an individual, they may bring the individual great satisfaction.

"How selfish soever man may be supposed, there are evidently some principles in his nature which interest him in the fortune of others, and render their happiness necessary to him, though he derives nothing from it, except the pleasure of seeing it."

Adam Smith, *The Theory of Moral Sentiments*

3. In order to make rational decisions, relevant opportunity costs must be identified.

"We should begin by recognizing the reality that just because something is good is not a sufficient reason for doing it. The number of good things we can do far exceeds the time available to accomplish them. Some things are better than good, and these are the things that should command priority attention in our lives....Jesus taught this principle in the home of Martha. While she was "cumbered about much serving" (Luke 10:40), her sister, Mary, 'sat at Jesus' feet, and heard his word' (v. 39). When Martha complained that her sister had left her to serve alone, Jesus commended Martha for what she was doing (v. 41) but taught her that 'one thing is needful: and Mary hath chosen that good part, which shall not be taken away from her' (v. 42). It was praiseworthy for Martha to be 'careful and troubled about many things' (v. 41), but learning the gospel from the Master Teacher was more 'needful.'"

Dallin H. Oaks, "Good, Better, Best," *Ensign*, Nov. 2007

The third guideline to thinking like an economist is to identify the relevant trade-offs. Due to scarcity, each choice we make requires us to sacrifice or give something up. **Opportunity cost** is the highest value trade-off – the value of the next best option foregone.

Have you ever passed up a "free" dinner? If so, why? Maybe it was because the free dinner required you to listen to a sales pitch or spend the evening out when you would rather be at home or out spending time with someone else. When we consider the opportunity cost, it is not only the money foregone but also the value of our time.

In order to assess opportunity costs, and thus make the best decisions, we need to be able to identify the relevant costs. Costs can be broken down into two broad categories – **explicit** and **implicit**.

An **explicit cost** is an out-of-pocket monetary expense for use of a resource owned by someone else. To obtain the use of a building, one would have to pay a monthly rent to the owner. An implicit cost is a foregone opportunity cost to the owner of the resource.

For example, farmers who own their own land do not have to pay a land rent (i.e., there is no explicit cost). However, using the land still implies an opportunity cost because the next best alternative would be to rent the land to someone else. The lost rent is therefore an **implicit cost**.

Explicit and Implicit Costs

Explicit Costs: An out-of-pocket monetary expense to obtain use of a resource.

Examples: Building rent, employee wages, etc.

Implicit Costs: An opportunity cost to the owner of a resource.

Example: Forgone rent to the land owner



Economic decisions should account for both explicit or out-of-pocket expenses as well as the implicit costs – the opportunity cost of using the resource in a different way. Explicit costs can be considered a part of opportunity costs. See the example below.

Students incur both explicit and implicit costs when attending school. Explicit costs would include out-of-pocket expenditures such as tuition, books, and fees while implicit cost would include the highest value of the next best use of one's time. If instead of going to school, the next best use of a student's time would be working, then the implicit cost would be the value of the wages that could have been earned instead of going to school.

Example: What is the Opportunity Costs of Attending College?

Explicit Costs of attending college: This is what you spend. For example, you pay \$3,000 for tuition, \$500 for books, and \$4,000 for room and board. There is also an opportunity cost associated with attending school. We will assume you would be paying for room and board if you didn't attend college so that is NOT an opportunity cost. But the \$3,500 that you spend on tuition and books could have been used to do something else (like go on vacation or put a down payment on a car, etc) if you were not attending college. This \$3,500 is part of the opportunity cost of attending college.

Implicit Costs of attending college: This is the value of what you gave up to undertake an activity. For example, if you gave up a job paying \$10,000 to attend college, then the implicit cost of college is \$10,000. This \$10,000 is also part of the opportunity cost of attending college.

Therefore, the opportunity cost of attending college is \$13,500.

4. Compare the marginal benefits to the marginal costs.

The fourth concept is to compare the marginal benefit to the marginal cost. The term marginal means additional or small, incremental change. **Marginal benefit** is the additional benefit (e.g., the increase on a test score from studying one more hour; the additional return from producing one more unit of output; or investing an additional dollar).

If by studying a second hour for an economics exam the score increases from 70 to 75, then the marginal benefit of that additional hour would be five points. We will let the Greek letter Delta (Δ) represent or mean the change. Thus the marginal benefit is calculated by the change in our test score divided by the change in our study time.

Solving the problem:

$$\frac{\Delta \text{ Grade}}{\Delta \text{ Study Time}} = \frac{75-70}{2-1} = 5 \text{ points}$$

Marginal cost is the additional cost of undertaking an activity. The marginal cost measures the additional value of what has to be sacrificed or given up. Instead of studying an additional hour for an exam, one may have used that time in a variety of other ways, for example to work, to sleep, or to study another subject. Recall that opportunity cost is the value of the next best option, and that value becomes the marginal cost. If studying math for the next hour was the next best option and the math test score would have increased by four points, then the marginal cost of

studying economics for the next hour would be the four point increase on the math test. If the individual chooses to study economics instead of math, it would imply that the value of additional five points in economics is worth more than the value of the additional four points in math.

Comparing Marginal Benefit to Marginal Cost

When making decisions, the marginal benefit should be compared to the marginal cost. If the marginal benefit is greater than or equal to the marginal cost, then the choice would be worthwhile.

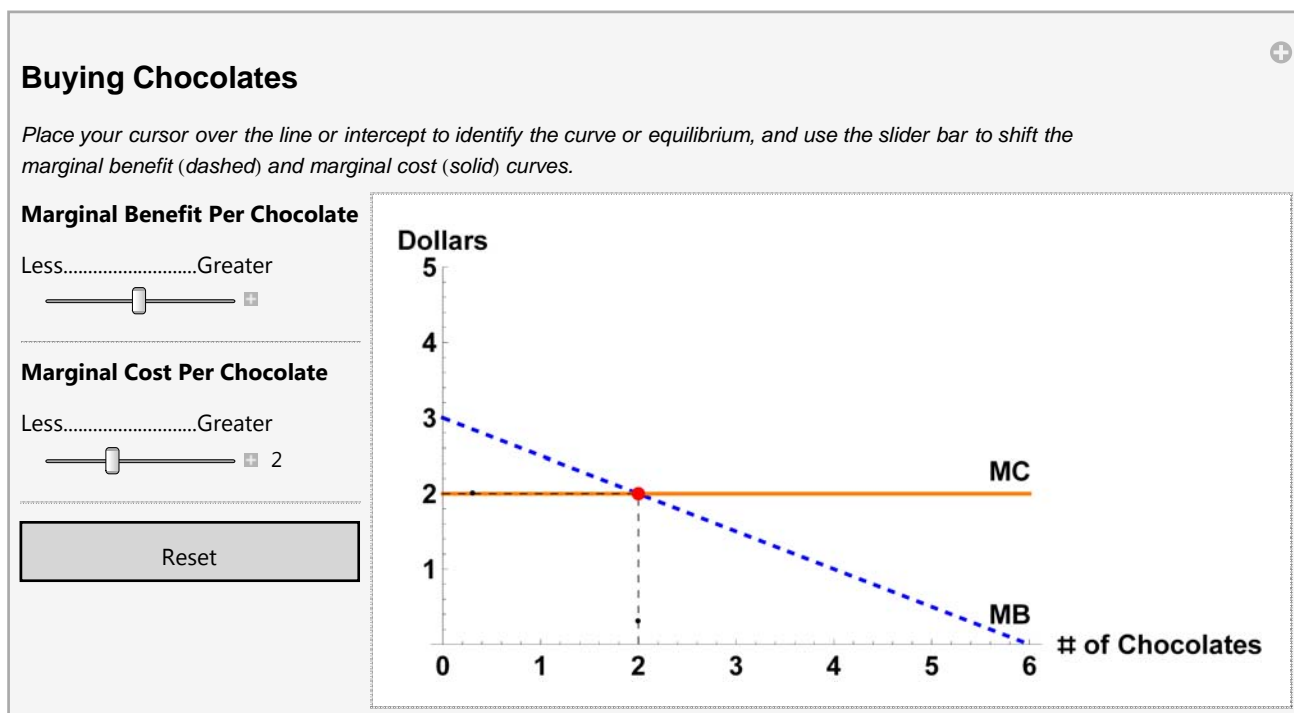
If a firm, by producing two more units of output can increase total revenue by \$100, then the marginal benefit or marginal revenue for an additional unit of output would be \$50. This is computed by taking the change in total revenue divided by the change in output.

If costs increase by \$80 by producing two more units of output, then the marginal cost per unit of output would be \$40. A marginal benefit of \$50 compared to the marginal cost of \$40 would indicate that this would be a wise choice.

$$MB = \frac{\Delta \text{Total Revenue}}{\Delta \text{Output}} = \frac{\$100}{2} = \$50 \text{ per unit} > MC = \frac{\Delta \text{Total Cost}}{\Delta \text{Output}} = \frac{\$80}{2} = \$40 \text{ per unit}$$

Although we may not explicitly write down the marginal benefit and marginal cost of each choice we face, we subconsciously do this every time we make a choice. Say that we are at a gourmet chocolate factory, where the price of each chocolate (its marginal cost) is \$2. Since we get less satisfaction from each additional chocolate consumed, the marginal benefit per chocolate declines. The graph below shows the marginal benefit line (dotted blue line). It shows that as we consume more chocolates our additional benefit declines to 0 when we eat the sixth chocolate. To determine how many chocolates to purchase, we would compare the marginal benefit to the marginal cost. If we buy one chocolate, then our marginal benefit is greater than our marginal cost. From the first chocolate we value the chocolate more than the cost of that one chocolate. If we buy two chocolates then our additional costs are equal to our additional revenue. However, if we buy three chocolates we are getting less value than the cost of the third chocolate, so we should not buy the third chocolate. Our **decision rule** is to go up to the point where the marginal benefit equals the marginal cost since there is no other quantity that would make us better off. Since the third, fourth, fifth, and sixth chocolates yield less value than their cost, we would only want to purchase two chocolates.

Rule: Continue consuming when MB > MC up to the point, and including, where MB=MC. Do not consume if MB < MC.



Original source code for graph above from Javier Puertolas. Modified by David Barrus.

Our preference for chocolate may change regardless of the price of chocolate. If this occurs then our marginal benefit curve shifts. If our preference for chocolate becomes greater then we are willing to buy more chocolates at each price. This results in a shift of the marginal benefit curve to the right. If our preference for chocolate becomes less and we do not like it as much, then the marginal benefit curve would shift to the left. On the graph above, move the “Marginal Benefit Per Chocolate” slider to shift the marginal benefit curve to the right and the left. If the cost of each chocolate increase or decreases, it will change how many chocolates we purchase. On the graph above, move the “Marginal Cost Per Chocolate” slider to change the price of chocolates. If our preference for chocolate increases (decreases) and the price of chocolate increases (decreases), do we consume more or less chocolate? Work through the scenarios on the graph above.

It is not uncommon for businesses to operate at the margin for only a fraction of a cent. In the foreign exchange and commodities markets, traders often make money by making only a fraction of a cent per unit, yet by buying and selling large quantities this small gain results in large profits.

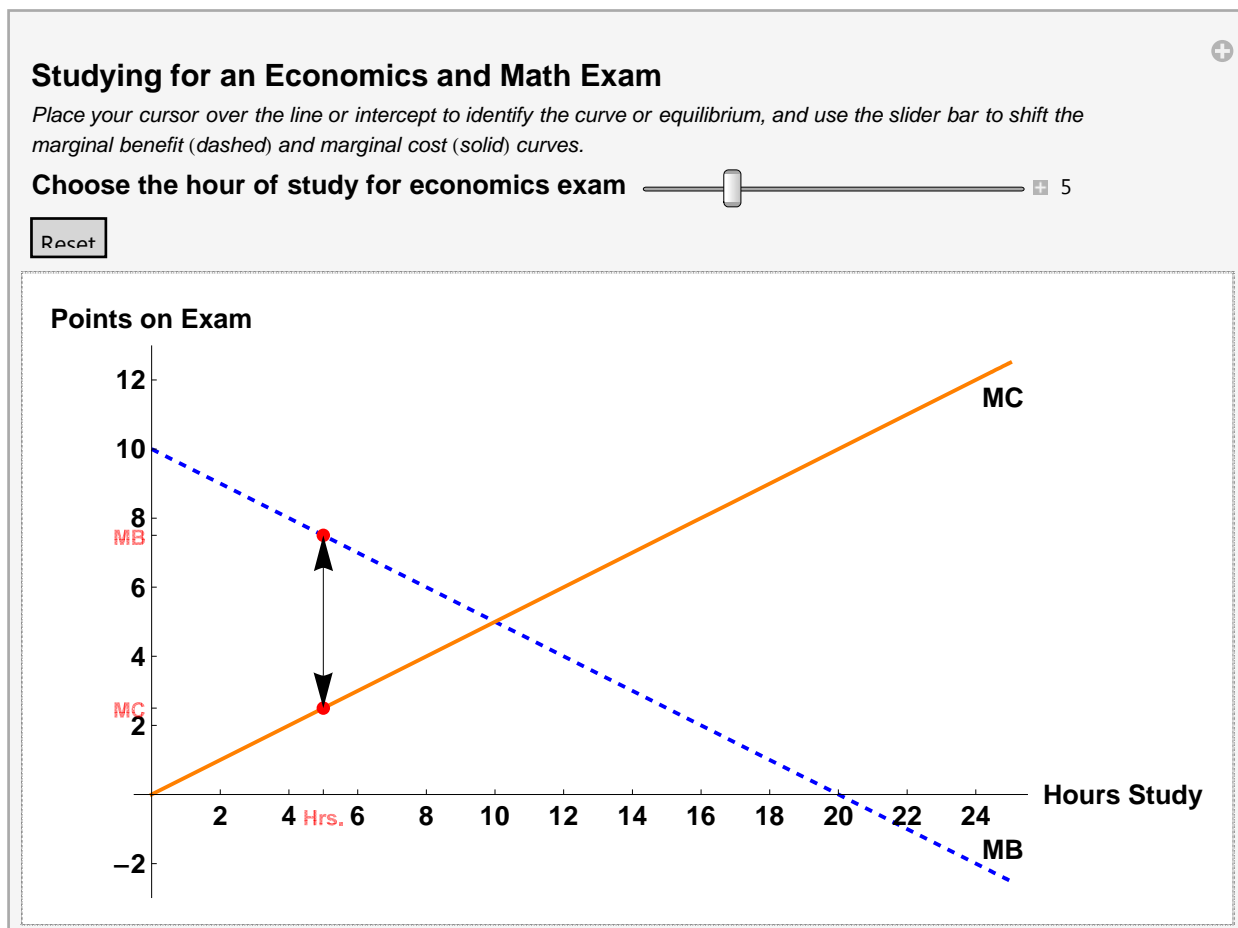
Have you ever wondered why the top of a pop can curves in? Years ago, cans use to be cylinder shaped not tapered in. Since the top and bottom of a can require a greater metal thickness, manufacturers found that by slightly reducing the diameter they could reduce the cost per can. While the change saves the manufacturer only a small amount per can, the savings are substantial when one considers the total number of cans produced annually.

The Law of Diminishing Marginal Returns and Increasing Marginal Costs

An important concept in marginal analysis is to recognize the **law of diminishing marginal returns**. As more units are consumed, the marginal benefit from an additional unit will eventually decline. For example, we are studying for an economics and math exam. We value a point on each exam the same. This means that one point on an economics exam is worth the same as one point on the math exam. For each additional hour spent studying for economics, we will gain additional points on our exam score; however, we do not gain as many additional points as we study more hours. On the other side, the trade-off is that we give up more points on our math exam for each additional hour that we study for economics and vice versa. The points lost on our math exam is the marginal cost of each additional hour of study on the economics exam. The marginal cost typically increases as more of something is undertaken. As additional units are produced, the cost per additional unit will eventually rise. In this example, the opportunity cost of the first hour of study is the math exam score. The opportunity cost or value of points given up

risers with each additional hour of study as activities with a greater value have to be sacrificed. With this in mind, how many hours should we study for the economics exam?

To understand how many hours we should study look at the graph below. Currently we have studied 5 hours for the economics exam. (Note: You may need to hit "Reset" to get it to 5 hours). The marginal benefit of the 5th hour of study is 7.5 additional points gained on the economics exam, and the marginal cost is 2.5 additional points not earned for the math exam. Move the slider from 5 hours to 10 hours. The marginal benefit and marginal cost of studying the 10th hour is equal to 5 additional points gained on our economics exam and 5 additional points lost on our math exam. Now move the slider to 15 hours. The marginal cost of the 15th hour of study is 7.5 additional points lost on our math exam, and the marginal benefit gained on our economics exam is 2.5 additional points. We are losing more points on our math exam than we are gaining on our economics exam. Move the slider to 22 hours. If we study 22 hours, our economics score now declines by 1 additional point, and we give up 11 additional points on our math exam. In this scenario our studying actually hurts our overall economics exam score.



Original source code for graph above from Javier Puertolas. Modified by David Barrus.

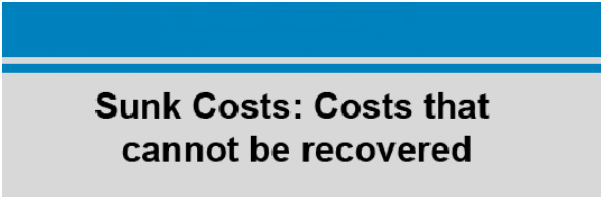
While the example focuses on exam scores, the marginal cost of an additional hour of study can be in terms of other things such as free time, hourly wages, etc. If we devote all of our time to studying economics during a day we would also give up time to work. Thus, the wages we could earn from working an additional hour could be the marginal cost. If we chose to work instead of studying, our marginal benefit for working an additional hour would be the wages we earn during that hour. However, we would be giving up additional points (marginal cost) on our economics exam. The law of diminishing marginal returns and increasing marginal costs apply in these situations, too.

Short- and Long-Term Impacts

For what shall it profit a man, if he shall gain the whole world, and lose his own soul? (Mark 8:36)

Another important principle to remember when comparing the marginal benefit and marginal cost is to consider both the short and long term impacts of a decision. A company that chooses to produce a faulty product may make large profits in the short run, but would suffer huge losses from recalls and lawsuits in the long run. Thus both the short and long term should be considered when making a choice.

Remember that marginal means additional – what is the additional benefit compared to the additional cost? When making choices, rationality suggests that we focus on the marginal costs and we ignore costs that have already been incurred or sunk and cannot be recovered.



**Sunk Costs: Costs that
cannot be recovered**

5. Consider the secondary effects.

The last guideline to thinking like an economist is to consider the **secondary effects**--the impacts a choice or decision will have on others and how others will react.

For example, in the name of safety, the Federal Aviation Administration (FAA) once considered a regulation that would require all airline passengers to have their own seats, even small children. When they examined how many passengers with children would stop flying and drive to their destination instead, they concluded that the regulation would actually increase the number of deaths because of the frequency of car accidents.

The Federal government's choice to bail out those impacted by a natural disaster such as a flood or fire, may be made with good intentions. However, the secondary effect may be to encourage people to live in more high risk areas or not purchase proper home insurance since they believe that the government will again come to their rescue.

Many banks and other institutions that took extraordinary financial risks were bailed out by the federal government. What incentive will this provide to those institutions with respect to taking on future financial risks?

Ponder and Prove - Section 2 - Guidelines to Thinking Like An Economist

Section 2 Questions +

Instructions: Click on the button that represents the correct answer. After you select an answer, click on the 'Grade My Answer' button.

Question 1
Question 2
Question 3
Question 4
Question 5
Question 6
Question 7
Question 8

Which of the following best illustrates the concept of making trade-offs?

- John gave up three hours of studying to go on a date.
- Banks trading circulated money for the same amount of new, crisp bills.
- All answers are correct
- A firms spends \$500.

Grade My Answer
Reset

"Results"

Original source code for problem above from Craig Bauling. Modified by David Barrus

Section 3: Microeconomics vs. Macroeconomics

Microeconomics vs. Macroeconomics


Economics can be broken down into two broad categories – microeconomics and macroeconomics.

Microeconomics focuses on the one. The behavior and decisions of an individual, firm, industry, or market and the resulting impact on the prices of specific goods, services, and resources. Macroeconomics focuses on the economy as a whole and the behavior of aggregate sectors such as consumers, businesses and government. Inflation, unemployment, and the business cycle are macroeconomic topics.


Although microeconomics and macroeconomics are interrelated, **macroeconomics** focuses on the forest as a whole, while **microeconomics** focuses on the individual trees. Just as no one raindrop is to blame for the flood, no one consumer or producer can cause the ups and downs in the economy. Yet collectively consumers and producers will determine where the economy goes.

Microeconomics vs. Macroeconomics

Microeconomics: Focus is on different parts of the economy.
Examples: Single price, market, firm, consumer.



**Micro
vs.
Macro**



Macroeconomics: Focus is on the economy as a whole.
Examples: Inflation, unemployment, business cycles.

Modeling and Laws

Like other sciences, economics relies on the scientific method. Theories are developed and hypotheses are tested. When we fail to reject the hypothesis and find that people behave in a particular way under the same conditions, we develop a **law or a principle**.

One such law in economics, for example, is the law of demand. It states that as the price of a good increases, the quantity demanded decreases and as the price of the good decreases, the quantity demanded increases.

Since we live in a very complex world, it is often difficult to understand relationships. Thus we create **models** that allow us to abstract from the real world all of the essential information to understand a particular relationship. We then assume that the other nonessential factors are held constant. The term **ceteris paribus** is a Latin phrase that means “holding all else constant.”

If we want to study the relationship between the price and the quantity demanded of a good, we would want to hold all other things constant or equal (*ceteris paribus*) such as the price of other goods, and the tastes, preferences, and incomes of consumers.

We often use models to increase our understanding. For example, a road map is a model or an abstraction from reality that gives us the essential information to get from point A to point B even though it does not show every curve in the road. Likewise, an economic model provides the essential information to understand how individuals will behave.

Positive Analysis vs. Normative Analysis

As business and government formulate policies they are often applying positive analysis to normative goals. **Positive analysis** focuses on the facts or cause-and-effect relationships. Examples of positive analysis include: the room temperature is 70 degrees or the unemployment rate is 5 percent.

Normative analysis requires an opinion or value judgment about what should or ought to be. The minimum wage should be \$3 more per hour. The answer depends on the opinion of the individual. A thorough positive analysis provides a better understanding of the conditions and outcomes that would occur as various normative decisions are implemented.

Correlation vs. Causation

In understanding cause and effect relationships it is important to distinguish between correlation and causation. If two variables are correlated there is a dependable relationship between how the two variables change. For example, if you lived in the country, you might observe that every morning the rooster crows then the sun comes up. Are these two correlated? Certainly. However, to conclude that the rooster crowing is causing the sun to come up would be

erroneous. The **post hoc fallacy** is the false belief that just because something precedes something else it must therefore be the cause. Other relationships have both correlation and causation. You might observe that when it rains the river rises. The two are correlated, and the additional rain is the cause of the increased height of the river.

Fallacy of Composition

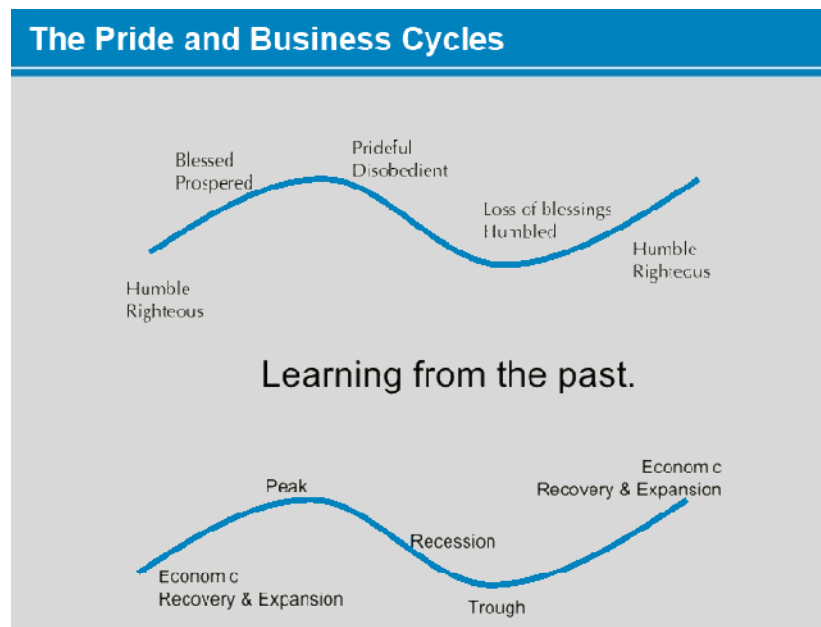
Another pitfall is the **fallacy of composition**--what is true or good for one is therefore true or good for all. For example, if I stand up in the middle of a ball game, it is true that I will have a better view of the game. The fallacy of composition would propose that if everyone would stand up at the ballgame, they would all have a better view. This is not necessarily true. Another example is if I owned a gas station, I may make greater profits if I lower the price of my gas. The fallacy of composition would be that all gas stations would make greater profits if they lowered their prices. However, if all firms lower the price of their gas, their profits may not be greater than they are right now.

Learning from the Past

An important reason to study the Book of Mormon is to learn of the circumstances that brought about the people's downfall. If we understand the pride cycle, we may learn how to prevent it in our own lives. Abraham Lincoln said: "What has once happened, will invariably happen again, when the same circumstances which combined to produce it, shall again combine in the same way."

Likewise in economics, we often study the past to learn about the circumstances that brought about certain conditions in our economy. By understanding how individuals react when faced with a particular set of circumstances, we can better predict how individuals will behave when faced with the same set of circumstances.

Pride Cycle and Economic Cycle



Ponder and Prove - Section 3 - Microeconomics vs. Macroeconomics

Section 3 Questions +

Instructions: Click on the button that represents the correct answer. After you select an answer, click on the 'Grade My Answer' button.

Question 1
Question 2
Question 3
Question 4

Microeconomics focuses on _____, while Macroeconomics focuses on _____.

What should be ; what is
 What is ; What should be
 Individual firms ; the economy as a whole
 The economy as a whole ; individual firms

Grade My Answer
Reset

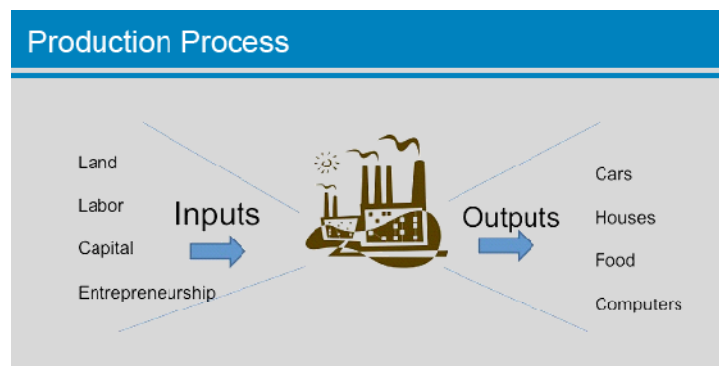
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Section 4: Production Process and Resources

The Production Process

The production process involves converting resources (aka: factors of production, or inputs) into goods and services.



Economic Resources

Economic Resources

Land: water, forest, arable land; *Payment: rental income*

Labor: human labor (physical & mental);
Payment: wage income

Capital: man-made items, buildings, equipment;
Payment: interest income

Entrepreneurship: combine other resources, innovate;
Payment: Profits



There are four main categories of resources: land, labor, capital and entrepreneurship.

1. Land

All natural resources both above and below the ground are part of the **land** resource including farm land, animals, forests, water, minerals, and air. For the use of these resources, businesses pay a rental income.

2. Labor

The **labor** resource includes both the physical and mental contribution of a worker. As a return for the use of their labor, workers are paid a wage. Education and job training increase human capital or the productivity of the labor resource and thus increase wages – as we'll see later in the course.

3. Capital

Capital includes man-made items that enhance the productivity of labor such as buildings, machinery, and equipment as well as roads and irrigation canals. Unlike consumer goods that directly satisfy our needs and wants today, **capital goods**, such as machinery, increase our future productivity which then allow us to produce more of the goods and services we want in the future. Interest income is the return or payment for the use of capital. Note that while money is often called capital, it is not an economic resource but simply enables or facilitates the purchase of one of the resources.

4. Entrepreneurship

The last resource is **entrepreneurship**. Entrepreneurs take risks and combine the other resources to provide goods or services. They are rewarded with profits when their ideas are successful, and suffer the losses when they fail.

All resources or factors of production can be categorized into one of these four resources.

Ponder and Prove - Section 4 - Production Process and Resources

Section 4 Questions

Instructions: Enter a lower case 'x' in the correct box or boxes. Click the 'Grade My Answer' button AFTER you an answer for every resource.

Resources	Land	Labor	Capital	Entrepreneurship
Crude Oil	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wind	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A treadmill	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bill Gates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A worker in a GM plant	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Irrigation Canal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Grade My Answer

Reset

"Results"

Out[4]=

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Section 5: Production Possibilities Curve

Production Possibilities Curve

As a society, we produce literally thousands of different goods and services. To better understand the trade-offs faced by an individual or society, we are going to use an economic model called the **production possibilities curve (PPC)**, sometimes referred to as the **production possibilities frontier (PPF)**. Recall that an economic model is a simplification of the real world and is designed to illustrate economic theories. In this case, we will assume that only two different goods or services can be produced. The production possibilities curve shows the maximum combination of these two goods or services that can be produced given our present technology and resources.

Let's say that our class represented a country and we were going to produce houses and software programs. Given our current technology and resources, the table below shows the different combinations of houses and software programs that we could produce as a society during the next year using all our resources in an efficient manner. The curve on the graph is the production possibilities curve or frontier which shows the maximum combination of houses and software programs we are capable of producing.

The PPC has a bowed out or concave shape, since some resources are better at producing one item than they are another. A hammer is a great tool for building houses, but has little use in developing a software program. Likewise, those with programming experience may do a great job computer programming, but lack construction skills.

To be on the production possibilities curve, we assume that technology and resources are fixed and that we are using all of our resources. We also assume **production efficiency** meaning that we are producing each combination in the least-cost manner, and thus we are unable to produce more of one output without producing less of the other output. Note that every combination on the line and below the line is attainable while those points outside the line are not attainable, given our current resources and technology. Since we have limited resources, the production possibilities curve reflects scarcity since we are limited on the amount of goods and services that can be produced. Points inside imply that we are not producing what we are capable of producing, and thus we are either not using all of our resources or we are not using our resources efficiently.

Deriving Production Possibilities Curve (PPC)

The Production Possibilities Curve (PPC) is derived from the different combinations of computer programs and houses we can produce. Those combinations are in the table on the left. When we are producing at a point (such as point B) on the production possibilities curve we assume that technology is fixed, that our resources are fixed, that we are fully using all our resources, and that there is production efficiency which means we are unable to produce more of one good without producing less of the other goods.

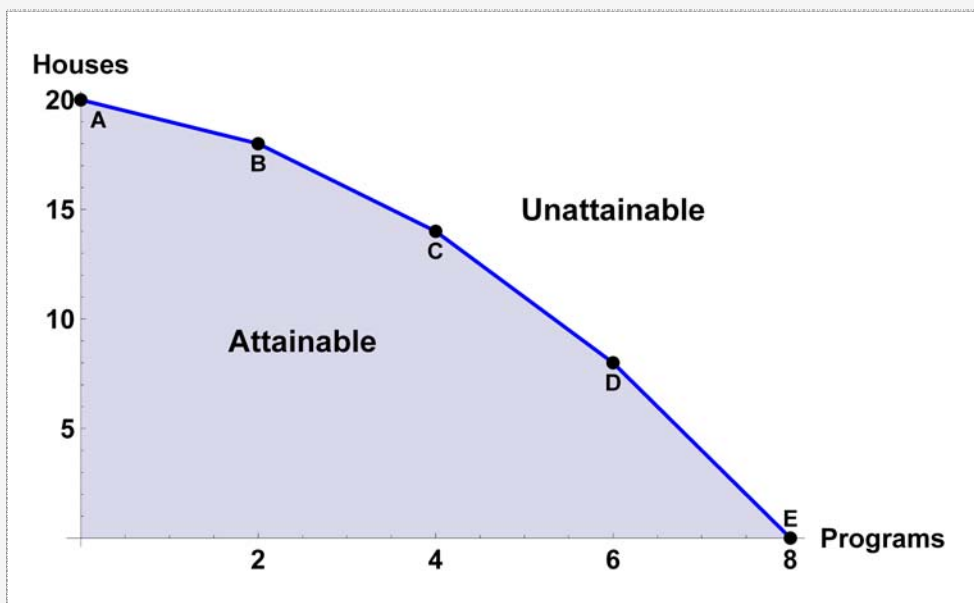
The opportunity cost is the amount sacrificed of the other good to produce one more unit of the good. The marginal opportunity cost is calculated as follows: (What is Sacrificed)/(What is Gained).

Production Possibilities

	Programs	Houses
A	0	20
B	2	18
C	4	14
D	6	8
E	8	0

Marginal Opp. Costs

	Programs	Houses
A	--	1 P
B	1 H	1/2 P
C	2 H	1/3 P
D	3 H	1/4 P
E	4 H	--



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Marginal Opportunity Cost

The production possibilities curve also reflects **opportunity costs**, since to get more of one good we have to sacrifice some of the other. The **marginal opportunity cost** measures the amount of a good that has to be sacrificed for each additional unit of the other good.

When everyone is working on houses we can produce 20 houses annually (point A). If we wanted 2 computer programs we would have to sacrifice 2 houses as we move from point A to point B. Thus the marginal opportunity cost would be 1 house for each additional computer program. Which individuals would want to move from construction to programming? Likely those individuals who are good at programming and not very good at building houses.

If we wanted an additional 2 computer programs (move from point B to C), we would have to sacrifice 4 houses or 2

houses for each additional program. Note that the marginal opportunity cost is increasing.

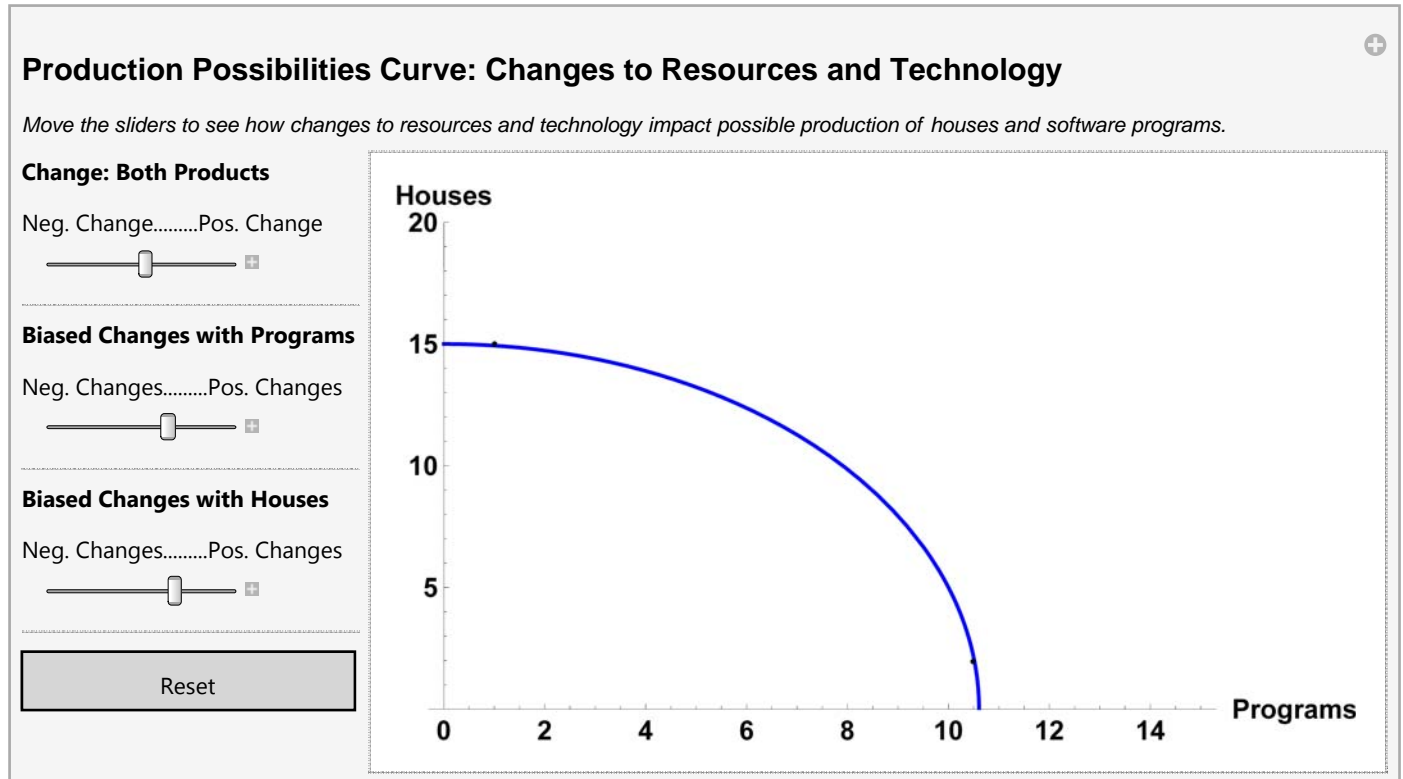
As we want more and more computer programs the number of houses we have to sacrifice per computer program increases. As we want more programs, the marginal opportunity cost increases to 2, then 3, and finally as we move from point D to E, we must sacrifice 4 houses for each additional computer program. The **increasing marginal opportunity cost** is due to the fact that some resources are better suited for producing one good than another. Eventually, we have to take experienced construction workers and set them down behind a computer and tell them to start programming.

Going the opposite direction, we can compute the marginal opportunity cost for one more house. If we were producing 8 software programs and wanted some housing, we would have to give up 2 computer programs to gain 8 houses, moving from point E to D. Thus a marginal opportunity cost would be 1/4 of a software program per house. As we want more houses, the number of computer programs we would have to sacrifice per house would increase from 1/4 (E to D) to 1/3 (D to C), 1/2 (C to B) and 1 (B to A). For simplicity, we assume that we have to produce at one of the points A through E. Note that as we produce more houses the marginal opportunity costs increases.

Allocative Efficiency

While each point on the production possibilities curve is productively efficient, there is only one point that is **allocatively efficient** - that is the combination of goods and services most desired by society. In a market economy that combination is determined by supply and demand. If no one wants a particular good, the producer will find that he or she is better off using the resources to produce something else. Thus, the pricing mechanism signals to producers what consumers want.

Shifts and Movements Along the Production Possibilities Curve



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Economic Growth: Outward Shift of the Production Possibilities Curve

Recall the PPC is based on a fixed set of resources and technology. As new resources are discovered, such as new oil deposits in Wyoming, we are able to produce more as a society. If the quality of the resources improves, we are able to shift the PPC outward. A workforce with a bachelors degree would be more productive than one with only an elementary education. As a society grows, including immigration, there are more workers that are able to produce more goods and services.

Technology also plays a key role in the growth of an economy. As new technologies are developed, resources are freed up to produce other goods and services. A society that produces capital goods (e.g., machinery) today foregoes the benefit of the consumer goods that could have been produced, but is then able to increase the production of goods and services in the future due to the machinery and other improvements that have been made. In 1950, one farmer in the U.S. fed 15 other people. By 1995, that number had increased to 128 and continues to rise. As technology advances and farmers use more and more capital, not as many people are required to be in agriculture and are able to go produce cars, TVs, and other goods and services that we enjoy. (Reference: *Agriculture, Technology and the Economy* Agriculture, Technology and the Economy Federal Reserve Bank of Dallas: <http://www.dallasfed.org/research/pubs/agtech.html>)

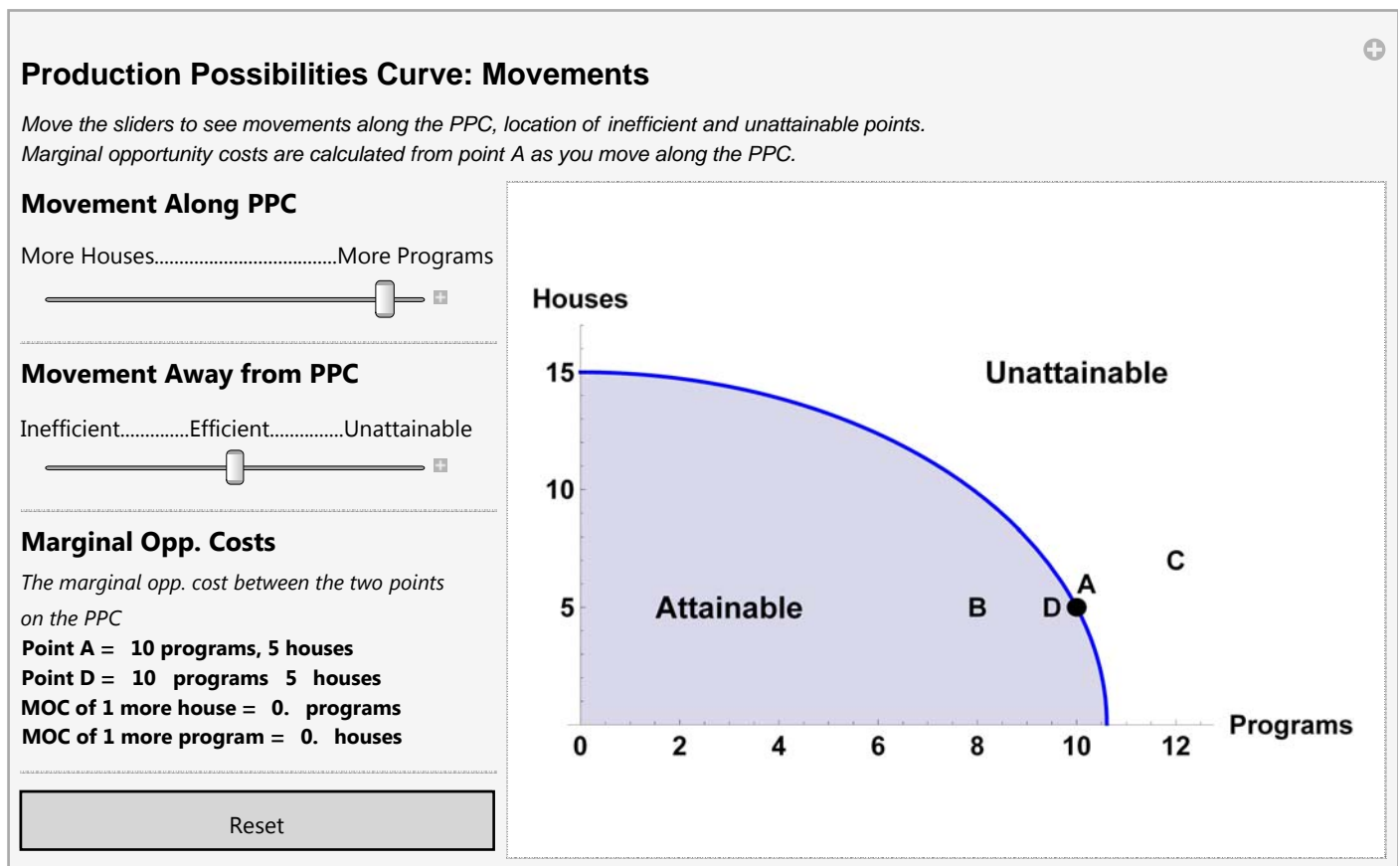
Inward Shift of the Production Possibilities Curve

If a society loses resources, the production possibilities curve would shift in. The loss of resources may come about from war, natural disasters, such as earthquakes or hurricanes, or disease, such as AIDS.

Biased Technologies: Partial Shift of the Production Possibilities Curve

Biased technologies only impact the production of one good. For example, the printing press allowed for more books to be produced, but didn't increase the number of wagons (if all resources were devoted to wagon production). When both goods are being produced, a biased technology reduces the number of resources being required to produce that good, so more of the resources can be devoted to producing the other good.

Graphically, if a nail gun is invented then it would cause a shift in the production possibilities curve only for the production of houses and not for the production of programs. This would cause a shift outward of the production possibility only on the axis for houses.



Original source code for graph above from Javier Puertolas. Modified by David Barrus.

Movements Away from the Production Possibilities Curve

If the resources or technology of a society change, the PPC will shift in or out. However, the PPC does not shift when resources are left unused or when they are not used efficiently. In this latter case, production would simply be illustrated by a point inside the PPC, i.e. society would be moving away from the PPC to an interior point. For example, an increase in the unemployment rate would move a society further inside the PPC. Note that the resources still exist so the PPC has not changed, we are just not using all of resources that we have. Move the slider "Movement Away from PPC" to see an inefficient point and an unattainable point.

Moving Toward the Production Possibilities Curve

Conversely, if more unused resources are used or the resources are used more efficiently (not due to a change in technology), the society would move toward the PPC.

Moving Along the Productions Possibilities Curve

Movement along the PPC occurs when there is a change in the combination of goods and services produced. In a market economy, consumers signal to producers the types of goods and services they desire and are willing to pay for. Use to slider on the graph above to see a movement along the PPC. Notice how the marginal opportunity costs change as the point moves.

Ponder and Prove - Section 5 - Part 1- Production Possibilities Curves

Section 5 Questions +

Instructions: Click on the button that represents the correct answer. After you select an answer, click on the 'Grade My Answer' button.

Question 1 Question 2 Question 3 Question 4

Which of the following explains a production possibilities curve?

- An economic model that compares the factors of production
- An economic model that compares trade-offs between producing two goods (maximum amount of two goods that can be produced)
- An economic model that shows the demand for two products
- A description of the things a person can produce

Grade My Answer

Reset

"Results"

Out[5]=

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Ponder and Prove - Section 5 - Part 2- Production Possibilities Curves

Section 5 Questions

Instructions: Enter a number to two decimal places (e.g. 1.00, 0.65, 0.40, etc).

Click the 'Grade My Answer' button when every box is filled. Every box must have an answer.

Points	DVDs	MOC of 1 more DVD	Hamburgers	MOC of 1 more Hamb.
A	0	<input type="text" value="0.00"/>	21	-
B	4	<input type="text" value="0.00"/>	20	<input type="text" value="0.00"/>
C	8	<input type="text" value="0.00"/>	18	<input type="text" value="0.00"/>
D	12	<input type="text" value="0.00"/>	14	<input type="text" value="0.00"/>
E	16	<input type="text" value="0.00"/>	8	<input type="text" value="0.00"/>
F	20	-	0	<input type="text" value="0.00"/>

"Results"

Out[6]=

Coded by David Barrus

Section 6: Comparative Advantage, Specialization, and Trade

"It is maxim of every prudent master of a family, never to attempt to make at home what will cost him more to make than to buy. The taylor does not attempt to make his own shoes, but buys them of the shoemaker."

Adam Smith, 1776

Absolute Advantage

An individual or country has an absolute advantage in the production of a good when she can produce the good using fewer resources than another. For example, assume on one acre of land Cain can produce 100 lbs of potatoes or 2 lambs (or some linear combination of the two products), and Abel can produce 50 lbs of potatoes or 4 lambs (or some linear combination of the two products). Cain would have an absolute advantage in potatoes and Abel in lambs. In this case, Adam Smith would argue there is a basis for trade that would make them both better off. Let's say without trade the brothers use their land to produce half of each product, i.e. Cain produces 50 lbs of potatoes

and 1 lamb; Abel produces 25 lbs of potatoes and 2 lambs. If they specialize then Cain would produce potatoes (100 lbs) and Abel would produce lambs (4). They could then trade say 25 lbs of potatoes for 1 lamb and both would be better off (Cain would then have 75 lbs of potatoes and 1 lamb and Abel would have 25 lbs of potatoes and 3 lambs) - both are better off! But what if an individual or country has an absolute advantage in many things, would there still be benefit to specializing and trading?

Two-Person Economy

To see if there are advantages to trade, even if one individual has an absolute advantage, let's use the example of a deserted island with only two individuals: Robinson Crusoe and Friday.

Assume that their diet will consist of fish and coconuts and that Robinson can catch 20 fish or gather 10 coconuts per eight-hour day, while Friday can catch 4 fish or gather 16 coconuts per eight-hour day. Robinson has the **absolute advantage** in catching fish, and Friday has the absolute advantage in gathering coconuts.

Robinson is currently consuming 10 fish and 5 coconuts per day, while Friday is currently consuming 2 fish and 8 coconuts per day. Together they are producing and consuming 12 fish and 13 coconuts. Would there be an advantage in them specializing and trading?

Production Possibilities Table

The table below shows consumption without trade, marginal opportunity costs, absolute advantage, and comparative advantage. If Robinson spent all day fishing he could get 20 fish, or if he spent all day gathering coconuts he can gather 10 coconuts. If Friday spent all day fishing he could get 4 fish, or if he spent all day gathering coconuts he can gather 16 coconuts.

	Current Consumption		Marginal Opportunity Cost (MOC)		Absolute Advantage		Comparative Advantage	
	Fish	Coconuts	Fish	Coconuts	Fish	Coconuts	Fish	Coconuts
Robinson	10	5	0.5 C	2 F	X		X	
Friday	2	8	4 C	0.25 F		X		X

Coded by David Barrus.

If Robinson spent all day fishing instead of gathering coconuts, he would have to give up 10 coconuts to get 20 fish, so his marginal opportunity cost per additional fish is (10 divided by 20) or 0.5 coconuts per fish. If instead he spent all day gathering coconuts, he would give up 20 fish and gain 10 coconuts. Robinson's marginal opportunity cost per coconut would be 2 fish (20 divided by 10). Friday's marginal opportunity cost of spending all day fishing instead of gathering coconuts would be 16 coconuts for 4 fish or 4 coconuts per fish. His marginal opportunity cost per additional fish would be 4 fish divided by 16 coconuts or 0.25 fish per coconut.

To see if there are advantages to specializing and trading, we now look at the marginal opportunity cost of each. We find that the marginal opportunity cost per additional fish is less for Robinson compared to Friday. Robinson gives up only 0.5 of a coconut per additional fish compared to Friday's 4 coconuts per additional fish. Since Robinson has a lower marginal opportunity cost for fishing, he is said to have a **comparative advantage** in fishing. In comparing the marginal opportunity cost for gathering coconuts, we find that Robinson's is 2 fish per coconut while Friday's is only 0.25 of a fish per coconut. Thus, Friday is said to have a comparative advantage in coconut gathering while Robinson has a comparative advantage in fishing.

Comparative Advantage

When Adam Smith spoke of the benefits from trade, he was referring to individuals specializing in the production of a good or service for which they had an comparative advantage. An individual is said to have a **comparative advantage**

tage if they have relatively lower marginal opportunity costs than another individual. Recall from earlier that marginal opportunity cost is sacrifice divided by gain. Just as individuals have a comparative advantage, countries have comparative advantages based on what resources they possess. Can comparative advantage (having lower opportunity costs) form the basis for mutually beneficial trade? Yes! When specialization takes place according to comparative advantage, the trading individuals (or countries) will both be better off. The concept of comparative advantage was taught by English economist David Ricardo (1772 – 1823) who pointed out that it is comparative advantage that will allow both countries to gain from trade. (Reference: <http://eh.net/encyclopedia/article/stead.ricardo>)

Terms of Trade

And it came to pass that the Lamanites did also go whithersoever they would, whether it were among the Lamanites or among the Nephies; and thus they did have free intercourse one with another, to buy and to sell, and to get gain, according to their desire. And it came to pass that they became exceedingly rich, both the Lamanites and the Nephites....

The Book of Mormon: Another Testament of Jesus Christ, Helaman 6:8-9

For trade to take place, each individual must benefit. An individual would not be willing to trade for a good that would cost him more than he or she could make by themselves. Highest and lowest rates at which the goods would trade for are determined by each individual's marginal opportunity cost. In our example, Robinson is specializing in fish production and Friday in gathering coconuts. Since they each want some of both, the **terms of trade** would have to be acceptable to both. The terms of trade would include the rate at which one good would trade for another. In looking at the marginal opportunity costs, we see that the terms of trade for coconuts range from 0.25 to 2. Friday must receive at least 0.25 of a fish for each coconut he gives up, and Robinson would not be willing to pay more than 2 fish for each coconut he receives. Somewhere between this range, both individuals would benefit.

As Adam Smith points out: "What is prudence in the conduct of every private family, can scarce be folly in that of a great kingdom. If a foreign country can supply us with a commodity cheaper than we can make it, better buy it of them with some part of the produce of our own industry, employed in a way in which we have some advantage."

Since the resources of each country vary, there is a benefit to **specializing** in a good in which we have a comparative advantage. Although we may have the resources to grow bananas in Idaho, we do not have a comparative advantage in banana production. Thus we specialize in potatoes and other goods and services for which we have a comparative advantage and trade for bananas and other tropical fruits from countries that have a comparative advantage in producing those goods.

Trade can improve the economic well being of the individuals and often the political relations among the different countries. We see examples of this in the scriptures, especially in the Book of Mormon (see the scripture above).

Specialization and Trading

We live in an age of specialization. When I was a boy, many people had Model T Fords. Compared to modern cars, they were relatively simple mechanically. Many people were able to fix their own cars by grinding the valves, changing the rings on the pistons, putting in new brake bands, and using a generous supply of baling wire. Nowadays automobiles are so sophisticated that the average person knows very little about how to repair them. The mechanics of today use a computer to diagnose engine problems. I mention this example to encourage you young men to get training and education in order to keep up. Technical education is very important, and the same thing is true in fields of higher education. Any kind of skill requires specialized learning.

James E. Faust, "Message to My Grandsons," *Ensign*, May 2007

Is it advantageous for Robinson Crusoe to specialize in fishing and Friday in gathering coconuts? Robinson is currently consuming 10 fish and 5 coconuts, and Friday is consuming 2 fish and 8 coconuts. If they specialize and trade exactly half of what they produce can they consume more?


If Robinson spends the same amount of time but now specializes in fishing, he will catch 20 fish (10 for himself and

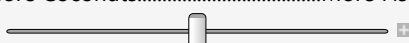
10 for Friday). Friday would specialize in gathering coconuts and gather a total of 16 coconuts (8 for himself and 8 for Robinson). With specialization and trade, Robinson can consume three more coconuts than before, and Friday can consume eight more fish than before. Total consumption of both fish and coconuts has risen from 25 to 36. This is an increase of 11 units (8 fish and 3 coconuts). Both are better off by specializing in the production of the good where they have a comparative advantage.

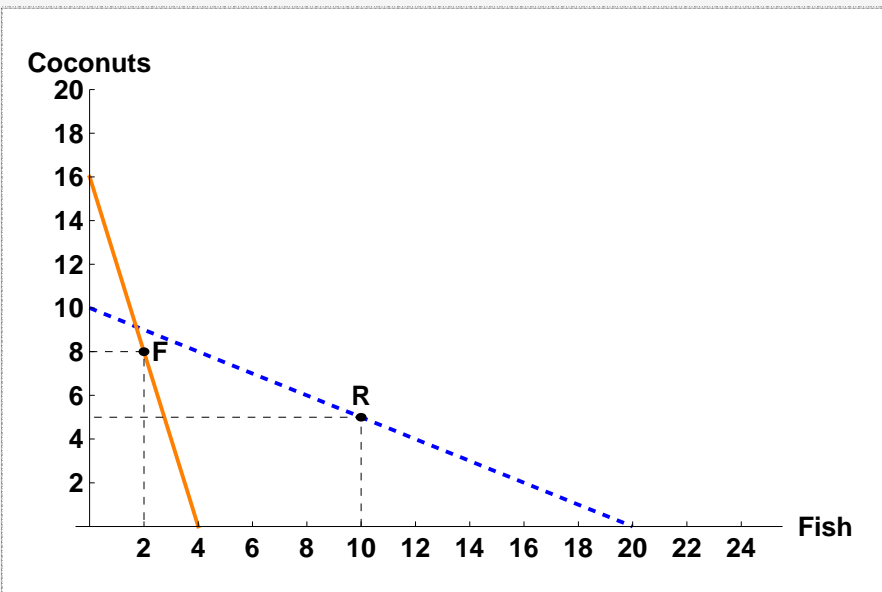
We can represent Robinson Crusoe's and Friday's production abilities using PPCs (look at the graph below). Note that because we are assuming that they can switch from fish to coconuts at a constant rate that the PPCs will be linear rather than bowed outward as we saw earlier (i.e. rather than increasing opportunity costs as we saw in the PPCs before, they have constant opportunity costs).

Production Possibilities Curve: Specialization and Gains from Trade

Move the sliders to see different production and consumption points of Robinson and Friday.

Robinson—(dotted blue line)
 More Coconuts.....More Fish

Robinson = 10 fish 5 coconuts
 MOC of 1 more coconut = 2 fish
 MOC of 1 more fish = $\frac{1}{2}$ coconut

Friday—(solid orange line)
 More Coconuts.....More Fish

Friday = 2 fish 8 coconuts
 MOC of 1 more coconut = $\frac{1}{4}$ fish
 MOC of 1 more fish = 4 coconuts



Consumption
 Assume Robinson and Friday will give up 1/2 of what they produce when they specialize and trade. Move the sliders to indicate this specialization.

	Consumption w/o Trade		Consumption w/Trade		Gains from Trade	
	Fish	Coconuts	Fish	Coconuts	Fish	Coconuts
Robinson	10	5	6.	6.5	-4.	1.5
Friday	2	8	6.	6.5	4.	-1.5

Click to see consumption point

Original source code for graph above from Javier Puertolas. Modified by David Barrus.

Friday's output per day is shown by the orange and solid PPC. He can gather 4 fish per day or 16 coconuts per day. Robinson's output per day is shown by the blue and dotted PPC. He can gather 20 fish per day or 10 coconuts per day. Their current consumption points are represented on the graph. By checking the box "Click to see consumption point" we can see where their consumption point is with trade before and after specialization.

Specialization allows consumption to be greater than what the individual can produce. Before trade, they produce and consume on their PPC. When they specialize they are still producing on their PPC, but they now consume at a point beyond the PPC. Specialization and trade has made both Robinson and Friday better off.

Ponder and Prove - Section 6 - Comparative Advantage, Specialization, and

Trade

Section 6 Questions

Instructions: Click on the button that represents the correct answer. After you select an answer, click on the 'Grade My Answer' button.

Question 1 Question 2 Question 3 Question 4

What is comparative advantage?

- A situation in which someone can produce the most amount of a good
- A situation in which someone can produce a good for the least cost
- A situation in which someone can consume more goods than another person
- A situation in which someone can produce a good at a lower opportunity cost than a competitor

Grade My Answer

Reset

"Results"

Out[7]=

Original source code for problem above from Craig Bauling. Modified by David Barrus

Summary

Key Terms

Absolute Advantage: when one party can produce a good using less goods than the other party.

Allocative Efficiency: the combination of goods and services most desired by society.

Biased or Partial Shift of PPC: a shift that only improves one of the two goods.

Capital: includes man-made items that enhance the productivity of labor such as buildings, machinery, and equipment as well as roads and irrigation canals.

Causation: something that generates an effect.

Ceteris Paribus: a Latin phrase that means "holding all else constant."

Comparative Advantage: when one party has a relatively lower marginal opportunity costs than the other party.

Correlation: a shared relationship between two or more phenomena.

Economics: studies how individuals, businesses, and societies allocate their scarce or limited resources among competing alternatives to reach their desired goal or objective (e.g., maximize one's satisfaction or profits) and the consequences of those decisions.

Entrepreneurship: an economic resource that combines other resources to provide goods and services.

Explicit Costs: is an out-of-pocket monetary expense to obtain use of a resource.

Fallacy of Composition: when it is believed incorrectly that "what is true or good for one is therefore true or good for all."

Implicit Costs: is an opportunity cost to the owner of a resource.

Incentives: something that prompts action or determination.

Invisible Hand: a theory by Adam Smith which states that people acting in their self-interest will ultimately lead to fulfilling the production needs and wants of the overall economy.

Inward Shift of PPC: caused by a loss of resources in a society.

Labor: an economic resource which includes both the physical and mental contribution of a worker.

Land: an economic resource which includes natural resources such as minerals, animals, water, and plots of land, etc.

Law of Diminishing Marginal Returns: as more units are consumed, the marginal benefit from an additional unit will eventually decline.

Laws: a rule or controlling influence, established by an authoritative position, for a specified setting.

Macroeconomics: focuses on the economy as a whole and the behavior of aggregate sectors such as consumers, businesses and government.

Marginal Benefit: additional benefit from undertaking an activity.

Marginal Cost: additional cost from undertaking an activity.

Marginal Opportunity Costs: the amount of a good that has to be sacrificed for each additional unit of the other good.

Microeconomics: focuses on the behavior and decisions of an individual, firm, industry, or market and the resulting impact on the prices of specific goods, services, and resources.

Models: a simplified example or standard used for explanation or imitation.

Normative Analysis: an opinion or value judgment about what should or ought to be.

Opportunity Costs: is the highest value trade-off - the value of the next best option foregone.

Outward Shift of PPC: a shift caused by an increase in the quantity or quality of the fixed resources in the economy.

Positive Analysis: focuses on the facts or cause-and-effect relationships.

Post Hoc Fallacy: is the false belief that just because something precedes something else it must therefore be the cause.

Principles: an established rule of action.

Production Possibilities Curve (PPC): an economic model that shows the maximum combination of these two goods or services that can be produced given our present technology and resources.

Production Possibilities Frontier (PPF): another name for the Production Possibilities Curve.

Production Process: the process of converting inputs, or economic resources, into outputs, or goods and services.

Scarcity: a shortage or finite availability of something.

Secondary Effects: the impacts a choice or decision will have on others and how others will react.

Self-interest: a regard for improving one's own circumstances.

Short- and Long-Term Impacts: when a decision is made there is a short-term result and a long-term result and they are not always the same.

Specialization: in relation to trade, is when one party focuses all of their resources on producing the good in which they possess a comparative advantage.

Sunk Costs: costs that cannot be recovered.

Terms of Trade: contains the limits of both parties' willingness to trade; the range is set by each party's marginal opportunity cost.

Trade-offs: an exchange of one or more things for something else.

Objectives

Section 1

1. What is economics?
2. Explain why scarcity exists.
3. In a market economy, how does price reflect scarcity?
4. Can the scarcity of an item increase, even if the production of the item has increased? Give an example.

Section 2

1. Explain why every decision involves trade-offs.
2. Explain how individuals rationally pursue self-interest and respond to incentives.
3. Identify and compute opportunity costs.
4. Explain why there is no such thing as a free lunch.

5. Identify and compute explicit costs.
6. Identify and compute implicit costs.
7. Explain sunk costs and why they should not be considered when making decisions.
8. Use marginal analysis in decision making
9. Compute the marginal benefit and marginal cost.
10. Explain why marginal benefits typically decrease
11. Explain why marginal costs typically increase.
12. Explain why both the short-term and long-term benefits and costs should be considered when making decisions. (Mark 8:36).
13. Use marginal analysis in making decisions and give an example of a situation in which the marginal benefit decreased and marginal cost increased.
14. Explain how secondary effects are also opportunity costs and can cause unintended consequences.

Section 3:

1. Explain the relationship and differences between microeconomics and macroeconomics.
2. Explain how the scientific method is used in economics.
3. Describe the difference between normative and positive economics.
4. Explain how the assumption of "ceteris paribus" is used in modeling.
5. Explain how the "post hoc fallacy" applies in analyzing the model results.
6. Explain the difference between correlation and causation.
7. Explain how the "fallacy of composition" applies in analyzing the model results.

Section 4:

1. Describe the difference between plant, firm, and industry.
2. Describe the four factors of production.

Section 5:

1. Use the Production Possibilities Frontier or Curve to model the production capabilities of a society or individual and analyze tradeoffs and comparative advantages.
2. Explain how a production possibilities frontier is derived.
3. Explain the assumptions of the PPF.
4. Explain how the PPF demonstrates scarcity.
5. Explain how the PPF demonstrates increasing marginal opportunity cost and how this causes the PPF to be bowed out or concave to the origin.
6. Describe the difference between productive and allocative efficiency.
7. Explain what factors will shift the PPF and how this relates to economic growth.
8. Demonstrate how education will impact a nation's PPF
9. Demonstrate how a society's decision to produce capital or consumer goods will impact future growth.
10. Demonstrate a biased technology shift in the PPF.
11. Explain what factors will move a society toward and away from the PPF.

Section 6:

1. From a PPF: compute the marginal opportunity cost; determine comparative advantage; and who should specialize in the production of each good.
2. Explain the difference between absolute and comparative advantage.
3. Determine which individual or society has a comparative advantage.
4. Using a PPF discuss the tradeoffs we face as a nation in our production decisions.
5. Demonstrate how specialization benefits individuals and societies.
6. Explain how the "terms of trade" establishes the range at which goods will be traded.