

AN INTRODUCTION TO MICROECONOMICS

Economics

What is economics? Economics is the study of how societies and individuals use limited resources to satisfy "unlimited" human wants. Resources are limited because they are scarce. Resources are scarce because there are more possible uses for the resources than there are resources available to be employed in those uses. When scarce resources confront "unlimited" wants, choices must be made. We can restate our definition of economics as follows: Economics is the study of how societies and individuals choose among alternative uses for scarce resources, in the never-ending effort to satisfy "unlimited" wants.

Microeconomics

Microeconomics is the study of how individual decision-makers (economic actors) choose to employ limited resources in their efforts to do the best that they can for themselves. Microeconomics examines the decision-making processes of four types of economic actors: demanders of goods and services (consumers or households), suppliers of goods and services (firms), suppliers of factors of production (consumers and firms), and demanders of factors of production (firms). In studying microeconomics, we will be examining the behavior of micro decision-making units -- the most disaggregated decision-making units in an economy -- as they work to answer three questions: What will be produced? How will it be produced? How will output be distributed?

Microeconomics assumes that each decision-maker strives to do the best for herself/himself with the limited resources available. "Self-interest" motivates the economic behavior of all participants in a microeconomic model. In 1776, Adam Smith wrote in *An Inquiry into the Nature and Causes of the Wealth of Nations*:

It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their self-interest. We address ourselves, not to their humanity, but to their self-love, and never talk to them of our necessities, but of their advantages.

From the beginning of modern economics, economists have assumed that economic actors behave as they do because they believe their actions will help them do the best for themselves that they can do, given the limited (scarce) resources they have to use.

Microeconomic decision-makers must balance benefits and costs. For example, when a household uses its limited income to buy a new car, the household must give up the other possibilities for using that income. For the household, the cost of the car is the value of the best alternative possibility that the household has to give up (forego). We will see in later chapters how the household will compare cost and benefit in order to decide how best to use its limited resources.

Economic Cost

To choose is to incur cost; costs arise out of making choices. We are all familiar with everyday sayings that remind us that to choose is to pay a price (incur a cost). “You cannot have your cake and eat it too.” “You can’t be two places at the same time.” Do these sound familiar? At some level, we all know that every choice we make, every action we take, imposes a cost on us. To be good students of economics, we must constantly be aware that all choices are costly. As the popular saying puts it, “There is no such thing as a free lunch.”

In our everyday lives, we act as if we believe that we incur costs only when we pay the price on the shelf for something we purchase. If the price is five dollars, the cost is five dollars. To begin thinking like microeconomists, we must see that the five dollars represents a range of alternative possibilities. When we use the five dollars to buy a frozen pizza, we can no longer use the five dollars to buy a case of root beer or a ticket to a movie or gasoline for our car. Often, determining the cost of a choice is not as easy as looking at the price on the shelf. For example, if we spend an hour studying economics, we cannot spend that same hour studying chemistry. The cost of the hour used to study economics is the value of the lost opportunity to spend that hour studying chemistry.

Economic cost is opportunity cost: the value of the best alternative foregone (lost). We most commonly use cost to mean business cost -- out-of-pocket expenses. When we are studying economics, we use cost to mean economic cost -- opportunity cost. For an example of the difference between business and economic cost, think about a retailer’s decision about how to use scarce shelf space. The retailer will not receive a bill for using the shelf space to display laundry detergent instead of breakfast cereal; nevertheless, to use the space for laundry detergent costs the retailer the opportunity to use that space for breakfast cereal. In everyday conversation, we might say that the shelf space is free (has no cost) for the retailer because we do not see the retailer “pay” for its use. In an economic conversation, we should recognize that the retailer’s choice is a costly one: to display more laundry detergent is to lose the opportunity to display more breakfast cereal.

Opportunity Cost: An Example

A close friend gives you two tickets to a rock concert in a nearby city. Many of your acquaintances would pay you \$75.00 for each ticket. The concert is on Thursday night, so you would have to give up working four hours that evening at the local gas station (\$5.15 per hour) in order to use the tickets to take a friend to the concert. Gas for your car and parking at the concert would cost \$17.50. What is the economic cost to you of using the two tickets to take a friend to the rock concert? Clearly, you spend \$17.50 on gas and parking. There is, however, more. You give up the opportunity to earn \$20.60 working at the gas station, so you can add \$20.60 to the economic cost of attending the concert. Finally, when you use the two tickets, you forego the opportunity to sell those tickets for \$150. It does not matter that the tickets appear to be “free” for you; the tickets are resources that you could convert into \$150. To use the tickets rather than sell them is to choose to give up the opportunity to have \$150. So what is the economic cost? In attending the concert, you give up the opportunity to have \$188.10 to spend on other goods and service. Your economic cost would be \$188.10, which is considerably more than the \$17.50 in

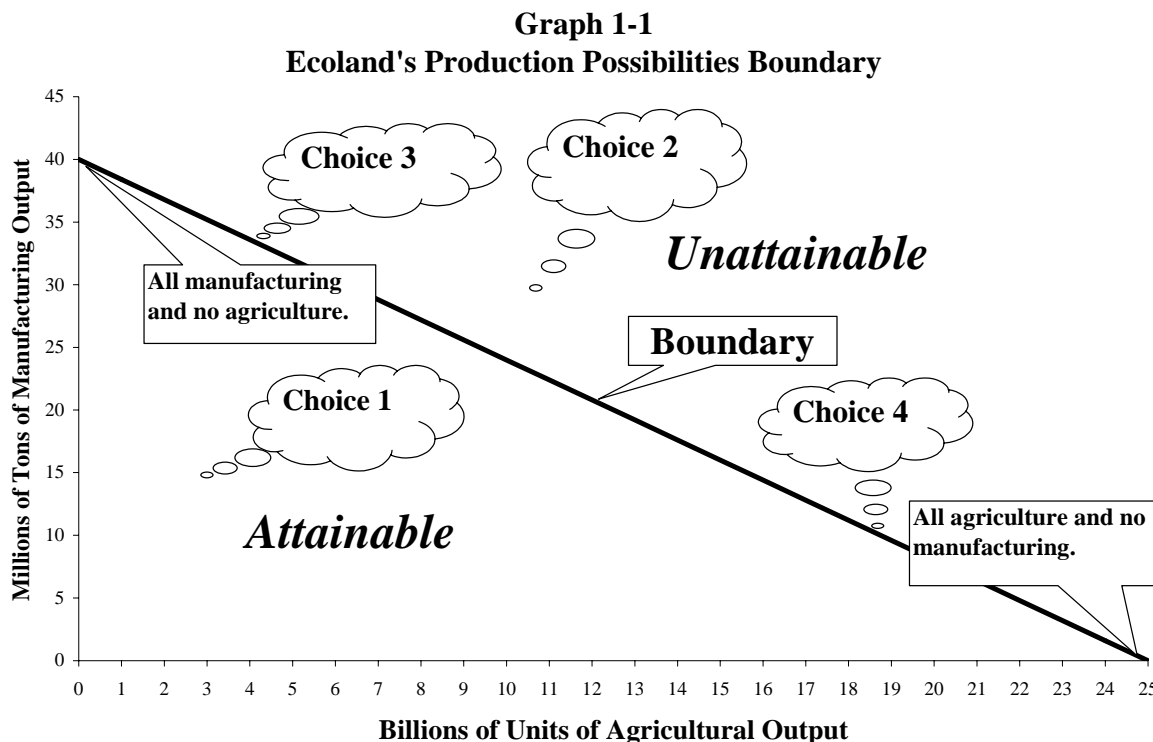
out-of-pocket expenses for gas and parking. Finding economic cost requires counting the opportunity cost of all the resources used up by a particular choice, not just the dollars and cents you pay out of your wallet or purse.

Economic Cost in Relative Price

In our day-to-day lives, we see prices stated in terms of dollars or some other monetary unit. When economists talk about prices, they are really talking about relative prices: the “price” of Commodity A as measured in units of Commodity B that must be given up in order to acquire A. In a grocery store, a can of tuna fish cost 70 cents and a box of breakfast cereal cost \$2.10. When we are considering a choice between tuna fish and breakfast cereal, we can say that the tuna fish price of breakfast cereal is three cans of tuna fish. We can also say that the cost of a can of tuna fish is one-third of a box of cereal. Having prices or costs stated in dollars and cents may seem to make day-to-day decision-making easier, but it may also make understanding price or cost in economic terms more difficult for us.

Production Possibilities Boundaries

Graph 1-1 summarizes for us the combinations of manufacturing and agricultural output that are



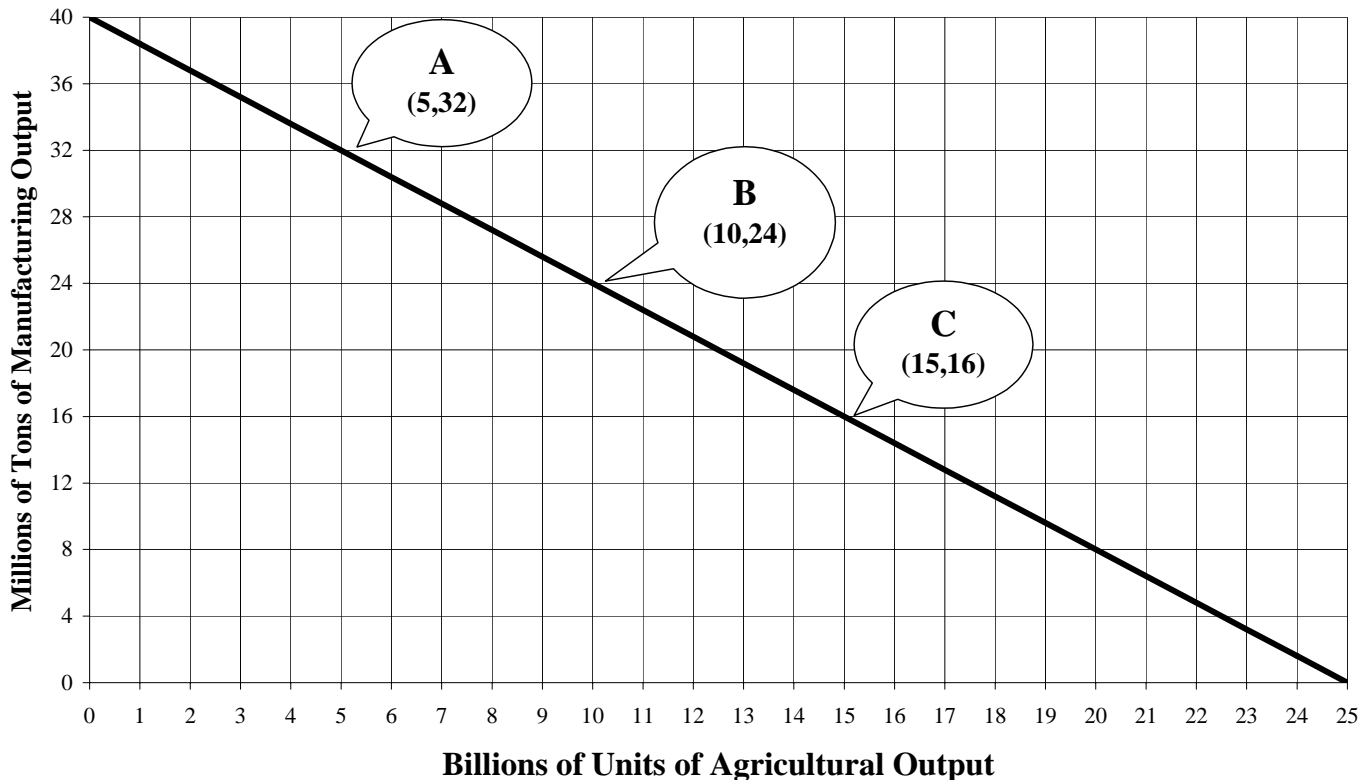
attainable or unattainable for an economics society, in this case Ecoland. The production possibilities boundary divides the attainable from the unattainable. The combinations from which Ecoland can choose are all those that lie on the boundary or within the boundary. All combinations of manufacturing and agricultural output that lie upward and to the right of the

boundary are unattainable for Ecoland. In Graph 1-1, Choice 1 represents a combination of manufacturing and agricultural output that is attainable by Ecoland. On the other hand, Choice 2 represents a combination that is unattainable by Ecoland and hence not a real choice for Ecoland. Choice 3 and Choice 4 lie on the production possibilities boundary. Ecoland can produce combinations of manufacturing and agriculture that lie on the production possibilities boundary, but only if it uses all of its available resources and uses them efficiently. In Graph 1-1, Ecoland could produce 40 million tons of manufacturing output and no agricultural output or 25 billion units of agricultural output and no manufacturing output. If Ecoland begins with all manufacturing and no agriculture, it can increase its production of agriculture only by withdrawing resources from manufacturing. The slope of the production possibilities boundary shows us the rate at which manufacturing output can be exchanged for agricultural output by releasing resources from manufacturing and transferring them to agriculture. In Graph 1-1, we see that we can speak on the manufacturing cost of agriculture or the agricultural cost of manufacturing. Graph 1-1 does not show cost in terms of any monetary units, only cost stated as opportunity cost valued: the relative price of one commodity stated in units of the other.

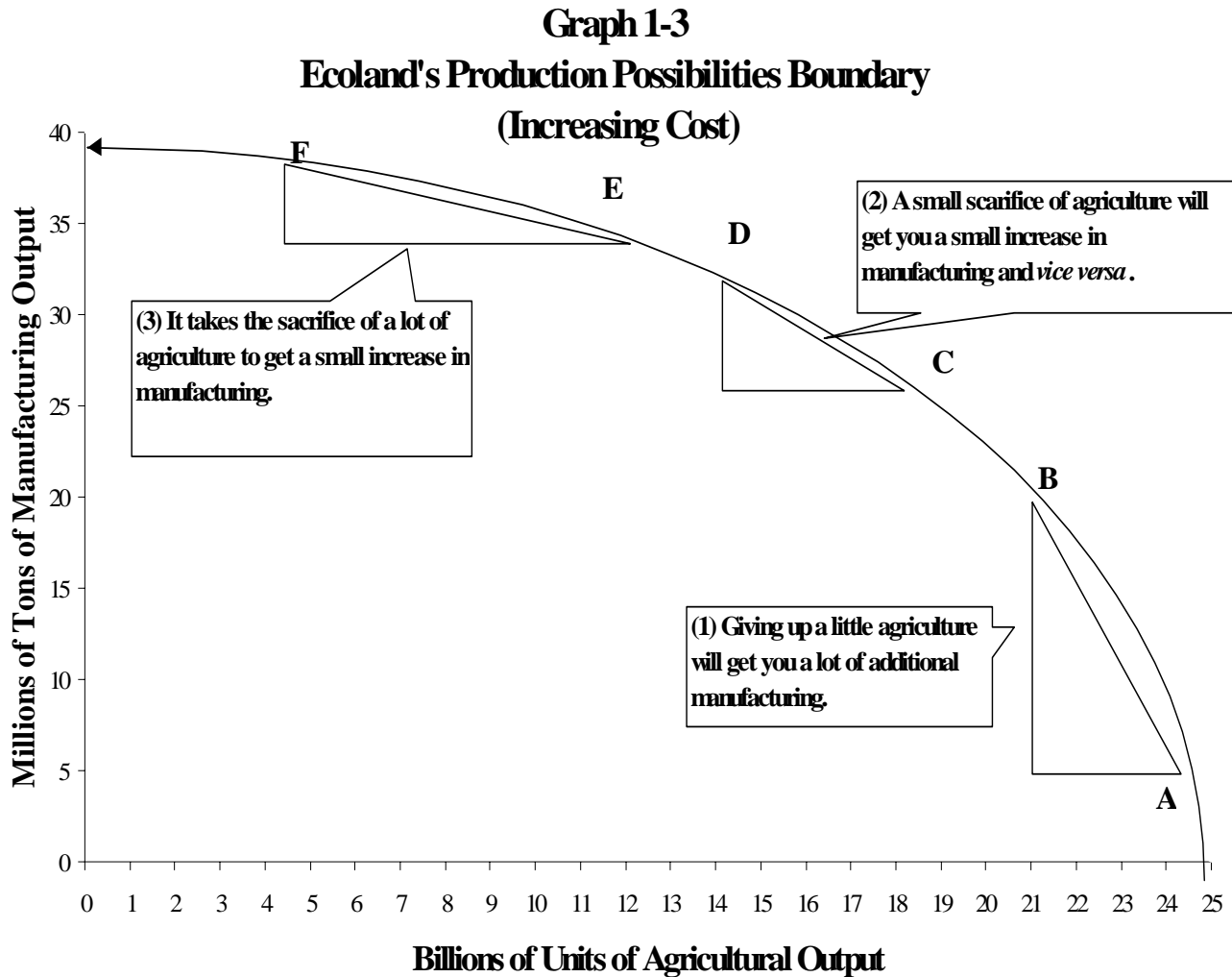
Constant Cost

Graph 1-2 illustrates for us that a straight-line production possibilities boundary describes a world with constant costs. In other words, the manufacturing price of agriculture is the same all along the boundary and agricultural price of manufacturing does not change along the boundary. To move from point A to point B requires sacrificing eight million tons of manufacturing output

Graph 1-2
Ecoland's Choices Along the Boundary
(Constant Cost)



to move from point A to point B requires sacrificing eight million tons of manufacturing output in order to increase agricultural output by five billion units. To move from point B to point C requires the sacrifice of eight million tons of manufacturing output to increase agricultural output by five billion units. All along the boundary, Ecoland must transfer resources capable of



producing 1.6 million tons of manufacturing output into agriculture in order to increase agricultural output by one billion units. When looking at a production possibilities boundary, we need to remember that it is the resources that could be used to produce manufacturing which must be transferred to agriculture in order to increase agricultural output. Likewise, it is the resources devoted agriculture that must be transferred to manufacturing in order to increase manufacturing output.

Increasing Cost

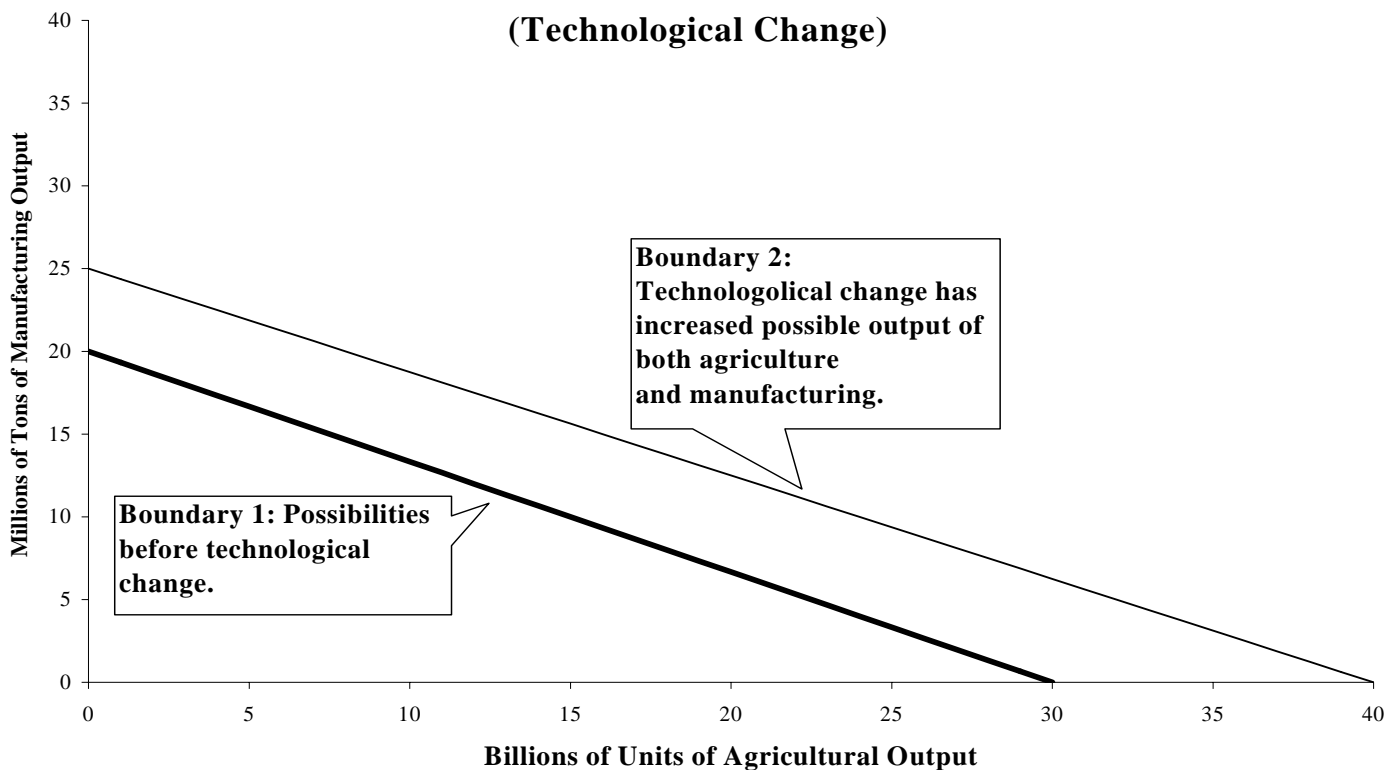
Graph 1-3 presents us with the production possibilities boundary for a country with increasing costs. The production possibilities boundary in Graph 1-3 presents a much more realistic picture of the world in which we live than is presented Graph 1-1 or Graph 1-2. In Graph 1-3, Ecoland

can produce approximately 40 million tons of manufacturing output if it chooses to produce no agricultural output and approximately 25 billion units of agricultural output if it chooses to produce no manufacturing output. In Graph 1-3, the manufacturing price of agriculture (relative price) increases as Ecoland moves for all manufacturing to all agriculture. We also see that the agricultural price of manufacturing increases as Ecoland moves from producing all agricultural Output to producing more and more manufacturing output. To move from point A to point B, Ecoland must give up a relatively small amount of agricultural output in order to gain a substantial addition in manufacturing output. To move from point E to point F, Ecoland must forego a large quantity of agricultural output in order to attain a small increase in manufacturing.

Economic Growth

When an economy is fully employing all of its resources and employing them efficiently (current output is somewhere on the production possibilities boundary), the only way that economy can increase the output of both agriculture and manufacturing is with economic growth. Changes in three factors may make possible economic growth. If the country's labor force increases, the country may experience economic growth. If the available quantities of other economic inputs increase, there may be economic growth. Finally, if there are improvements in technology (the way inputs are put together to produce outputs), there is the possibility for economic growth. Graph 1-4 shows us one possible scenario for economic growth. In Graph 1-4, positive technological change has made it possible for the economy to produce more agricultural output, more manufacturing output, or more of both. Economic growth need not be balanced growth. Indeed, in graph 1-4 the relative increase in possible manufacturing output is less than the relative increase in possible agricultural output. Graph 1-4 illustrates only one of a myriad of

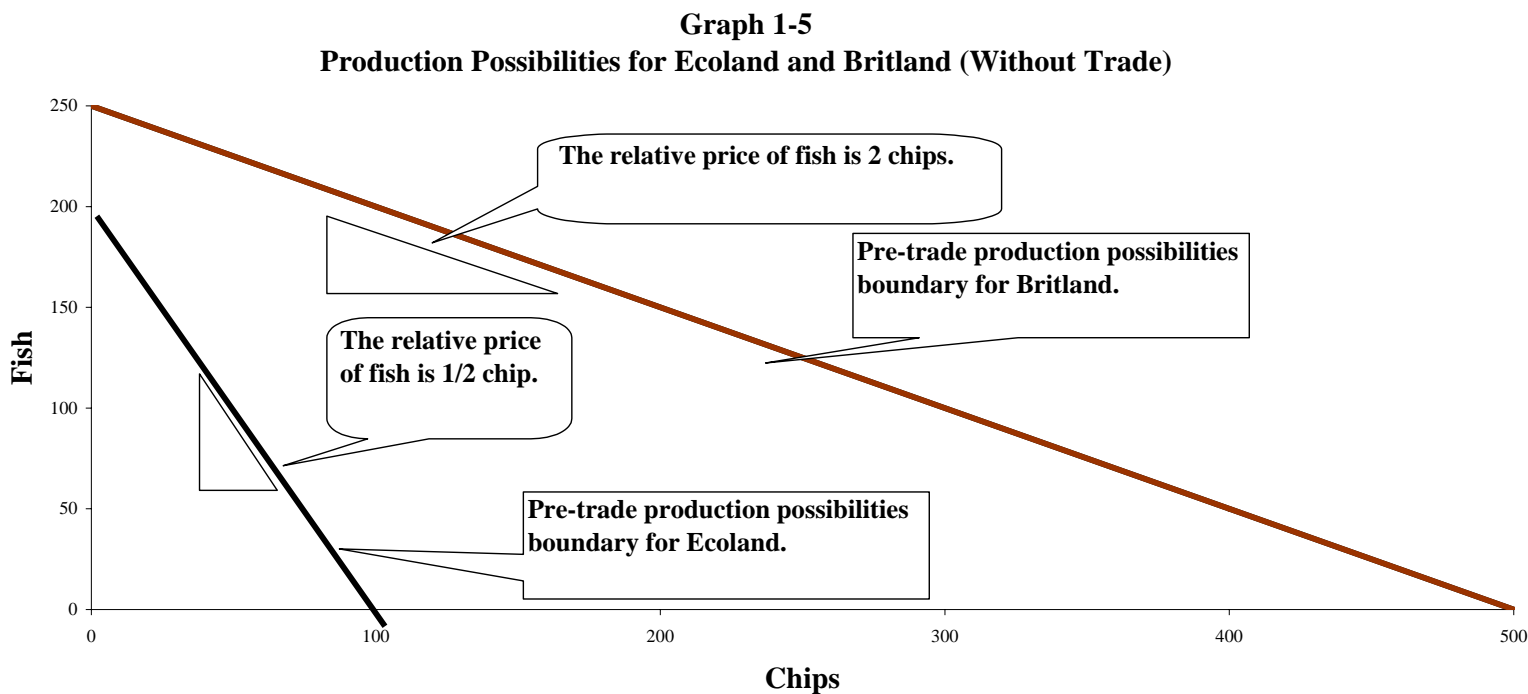
Graph 1-4
Production Possibilities Boundaries and Economic Growth
(Technological Change)



possible changes in the production possibilities boundary resulting from economic growth. Moreover, should there be a decrease in the labor force, a reduction in the availability of other resources, or negative technological change, the production possibilities boundary could shift inward, reducing the combinations of manufacturing and agricultural output attainable. In sum, in graph 1-4 the relative increase in possible manufacturing output is less than the relative increase in possible agricultural output. Graph 1-4 illustrates only one of a myriad of possible changes in the production possibilities boundary resulting from economic growth. Moreover, should there be a decrease in the labor force, a reduction in the availability of other resources, or negative technological change, the production possibilities boundary could shift inward, reducing the combinations of manufacturing and agricultural output attainable. In sum, economic growth means that the number of attainable combinations of agriculture and manufacturing output has increased, and economic decline tells us that the number of combinations agricultural and manufacturing output attainable has decreased.

Comparative Advantage: Specialization and Exchange

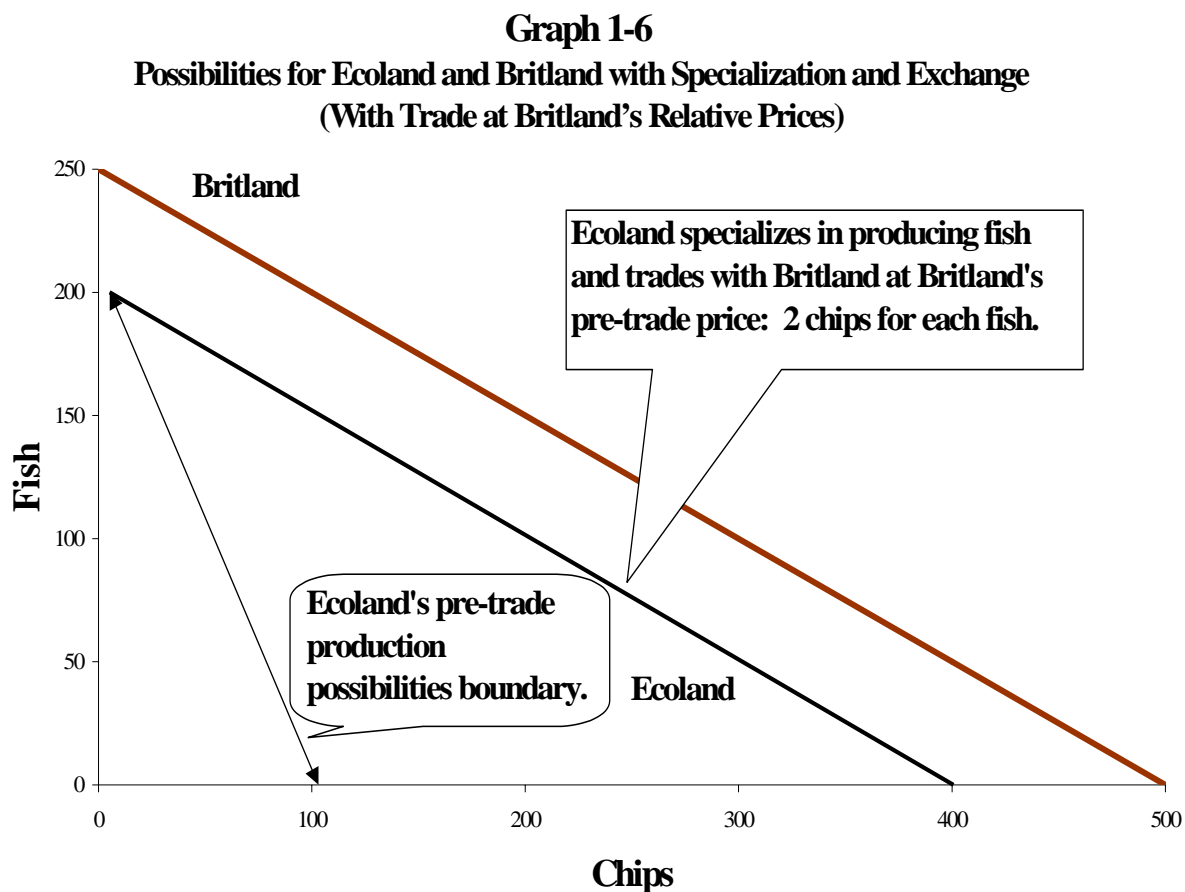
Markets exist to facilitate exchange: individuals and societies trading with other individuals and societies for the mutual benefit of all. Graph 1-5 displays the production possibilities for Ecoland and Britland when each country produces and consumes in isolation (without foreign trade). From a quick look at Graph 1-5, we can tell that Britland can produce more fish and



more chips than can Ecoland. It would appear that Britland should have no interest in trading with Ecoland. On closer examination, we see that in Britland the relative price of fish in terms of chips is one-half chip for one fish. In Ecoland, the relative price is two chips for one fish. Comparing the relative prices, we see that fish are relatively less expensive in Ecoland and that

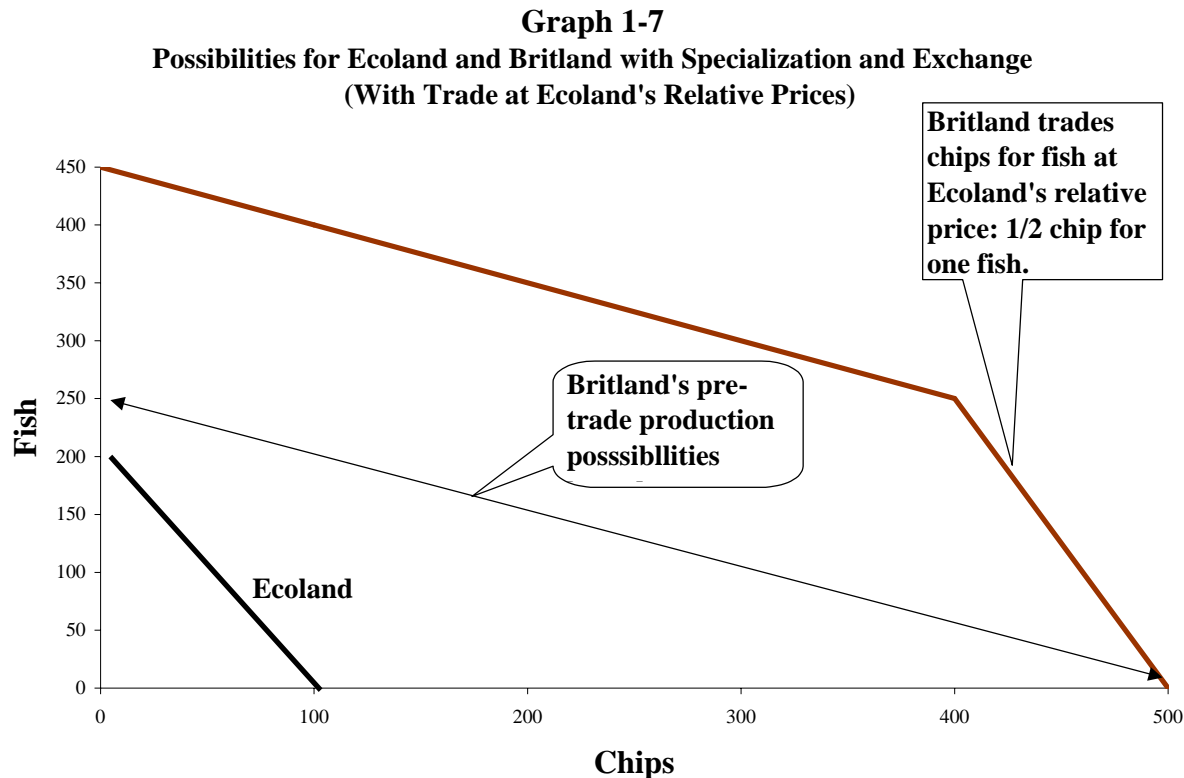
chips are relatively less expensive in Britland. Ecoland has a comparative advantage in fish, and Britland has a comparative advantage in chips.

Graph 1-6 shows us how Ecoland's possibilities change if Ecoland specializes in the production of fish and trades fish with Britland in exchange for chips at Britland's pre-trade relative prices. Britland is no worse off than it would be without trade, and Ecoland can be significantly better off with trade. Although Britland will probably continue to produce both fish and chips, Ecoland will specialize in the production of fish and trade fish for chips.



Graph 1-7 shows us how Britland's possibilities change if Ecoland specializes in fish and Britland trades chips for fish at Ecoland's pre-trade relative prices. Given that the absolute size of the Britland economy is larger than the absolute size of the Ecoland economy, Britland will probably not specialize exclusively in the production of chips. Britland will purchase some of the fish for domestic consumption from Ecoland at a chips cost much lower than Britland's own cost. Ecoland will continue to specialize in producing fish and purchase chips from Britland at the same sacrifice of fish that would be required by changes in domestic production. In this case, Britland has the possibility of being better off, while Ecoland would be no worse off than it was without trade. If the chips price of fish at which Ecoland and Britland trade falls anywhere

between the pre-trade price in Ecoland and the pre-trade price in Britland, both countries will be better off as the result of the specialization and trade.



An economic entity -- an individual or an entire economy -- will tend to specialize in producing the product in which it has a comparative advantage and trade for the product in which has a comparative disadvantage. Recognizing comparative advantage, two economic entities will always be able to improve their situations by some degree of specialization in production and exchange (trade). Only if pre-trade relative prices are the same for both economic entities will there be no possibilities for gains from specialization and trade.

Be Economical When Studying Economics

Economics is rigorous! You have to work at learning economics. Economics may seem to make perfect sense to you without having any real meaning for you. You have to be able to use what you have "learned" in economics to have actually learned economics! You do not have to have taken calculus to be successful in introductory economics, but you do need to be able to use the fundamentals of high school algebra and geometry and to reason quantitatively.

Economics is a visual science. Whether we draw economic pictures with lines in a graph or systems of equations, those pictures tell the story of economics. To understand introductory economics, you must be able to "see" economics in action. Study carefully the graphs (pictures) in each chapter. This course introduces and develops many important economic concepts by using economic pictures. You should use these graphs to help you build your understanding of

economics. To check your understanding, draw your own pictures. If you learn to read carefully the lines in a graph, you will learn to use graphs to organize your thinking about economics and to assist you in answering correctly questions about economics. Time spent relating the basics of microeconomics to the graphs that tell their stories will be time well spent.