

## 14.3: Reading- Absolute and Comparative Advantage

### Absolute and Comparative Advantage

To understand why certain countries import or export certain products, you need to realize that every country (or region) can't produce the same products. The cost of labor, the availability of natural resources, and the level of know-how vary greatly around the world. Most economists use the concepts of **absolute advantage** and **comparative advantage** to explain why countries import some products and export others.

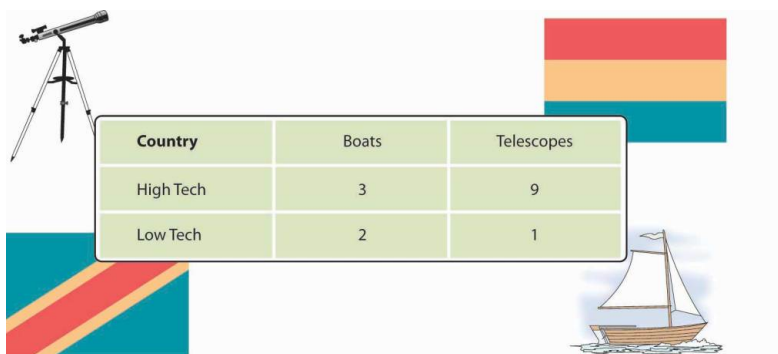
#### Absolute Advantage

A nation has an absolute advantage if (1) it's the only source of a particular product or (2) it can make more of a product using the same amount of or fewer resources than other countries. Because of climate and soil conditions, for example, France had an absolute advantage in wine making until its dominance of worldwide wine production was challenged by the growing wine industries in Italy, Spain, and the United States. Unless an absolute advantage is based on some limited natural resource, it seldom lasts. That's why there are few, if any, examples of absolute advantage in the world today.

#### Comparative Advantage

How can we predict, for any given country, which products will be made and sold at home, which will be imported, and which will be exported? This question can be answered by looking at the concept of comparative advantage, which exists when a country can produce a product at a lower opportunity cost compared to another nation. But what's an *opportunity cost*? Opportunity costs are the products that a country must decline to make in order to produce something else. When a country decides to specialize in a particular product, it must sacrifice the production of another product.

Let's simplify things by imagining a world with only two countries—the Republic of High Tech and the Kingdom of Low Tech. We'll pretend that each country knows how to make two and only two products: wooden boats and telescopes. Each country spends half its resources (labor and capital) on each good. Figure 14.3.1 shows the daily output for both countries: High Tech makes three boats and nine telescopes while Low Tech makes two boats and one telescope. (They're not highly productive, as we've imagined two very small countries.)



Country	Boats	Telescopes
High Tech	3	9
Low Tech	2	1

Figure 14.3.1: Comparative Advantage in the Techs

When we assumed that High Tech spent half of its time on boats and half of its time on telescopes, it was able to make nine telescopes (see Figure 14.3.1). If it gives up the opportunity to make the nine telescopes, it can use the time gained by not making the telescopes to make three more boats (the number of boats it can make with half of its time). Because High Tech could make three more boats by giving up the opportunity to make the nine telescopes, the opportunity cost of making each boat is three telescopes ( $9 \text{ telescopes} \div 3 \text{ boats} = 3 \text{ telescopes}$ ). First, note that High Tech has an *absolute* advantage (relative to Low Tech) in both boats and telescopes: it can make more boats (three versus two) and more telescopes (nine versus one) than Low Tech can with the same resources. So, why doesn't High Tech make *all* the boats and *all* the telescopes needed for *both* countries? Because it lacks sufficient resources to make all the boats and all the telescopes, High Tech must, therefore, decide how much of its resources to devote to each of the two goods. Let's assume that each country could devote 100 percent of its resources on *either* of the two goods. We'll pick boats as a start. If both countries spend *all* their resources on boats (and make no telescopes), here's what happens:

- When we assumed that Low Tech spent half of its time on boats and half of its time on telescopes, it was able to make only one telescope (Figure 1). If it gives up the opportunity to make the telescope, it can use the time gained by not making the telescope to make two more boats. Because Low Tech could make two more boats by giving up the opportunity to make one telescope, the opportunity cost of making each boat is half a telescope ( $1 \text{ telescope} \div 2 \text{ boats} = 1/2 \text{ of a telescope}$ ).
- Low Tech, therefore, enjoys a *lower opportunity cost*: Because it must give up less to make the extra boats ( $1/2 \text{ telescope}$  vs.  $3 \text{ telescopes}$ ), it has a comparative advantage for boats. And because it's better—that is, more efficient—at making boats than at making telescopes, it should specialize in boat making.

Now to telescopes. Here's what happens if each country spends all its time making telescopes and makes no boats:

- When we assumed that High Tech spent half of its time on boats and half of its time on telescopes, it was able to make three boats (Figure 1). If it gives up the opportunity to make the three boats, it can use the time gained by not making the boats to make nine more telescopes. Because High Tech could make nine more telescopes by giving up the opportunity to make three boats, the opportunity cost of making each telescope is one-third of a boat ( $3 \text{ boats} \div 9 \text{ telescopes} = 1/3 \text{ of a boat}$ ).
- When Low Tech spent half of its time on boats and half of its time on telescopes, it was able to make two boats. If it gives up the opportunity to make the two boats, it can use the time to make one more telescope. Thus, if Low Tech wants to make only telescopes, it could make one more telescope by giving up the opportunity to make two boats. Thus, the opportunity cost of making each telescope is two boats ( $2 \text{ boats} \div 1 \text{ telescope} = 2 \text{ boats}$ ).
- In this case, High Tech has the *lower opportunity cost*: Because it had to give up less to make the extra telescopes ( $1/3 \text{ of a boat}$  vs.  $2 \text{ boats}$ ), it enjoys a comparative advantage for telescopes. And because it's better—more efficient—at making telescopes than at making boats, it should specialize in telescope making.

Each country will specialize in making the good for which it has a comparative advantage—that is, the good that it can make most efficiently, relative to the other country. High Tech will devote its resources to telescopes (which it's good at making), and Low Tech will put its resources into boat making (which it does well). High Tech will export its excess telescopes to Low Tech, which will pay for the telescopes with the money it earns by selling its excess boats to High Tech. Both countries will be better off.

Things are a lot more complex in the real world, but, generally speaking, nations trade to exploit their advantages. They benefit from specialization, focusing on what they do best, and trading the output to other countries for what *they* do best. The United States, for instance, is increasingly an exporter of knowledge-based products, such as software, movies, music, and professional services (management consulting, financial services, and so forth). America's colleges and universities, therefore, are a source of comparative advantage, and students from all over the world come to the United States for the world's best higher-education system.

France and Italy are centers for fashion and luxury goods and are leading exporters of wine, perfume, and designer clothing. Japan's engineering expertise has given it an edge in such fields as automobiles and consumer electronics. And with large numbers of highly skilled graduates in technology, India has become the world's leader in low-cost, computer-software engineering.

### KEY TAKEAWAYS

- To explain how countries decide what products to import and export, economists use the concepts of *absolute* and *comparative advantage*.
  - A nation has an **absolute advantage** if it's the only source of a particular product or can make more of a product with the same amount of or fewer resources than other countries.
  - A **comparative advantage** exists when a country can produce a product at a lower *opportunity cost* than other nations.
- Nations trade to exploit their advantages: they benefit from specialization, focusing on what they do best and trading the output to other countries for what *they* do best.

### Check Your Understanding

Answer the question(s) below to see how well you understand the topics covered in this section. This short quiz does **not** count toward your grade in the class, and you can retake it an unlimited number of times.

Use this quiz to check your understanding and decide whether to (1) study the previous section further or (2) move on to the next section.

<https://assessments.lumenlearning.com/assessments/163>

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