chapter 5(8)

International Trade

Chapter Objectives

Students will learn in this chapter:

- How comparative advantage leads to mutually beneficial international trade.
- The sources of international comparative advantage.
- Who gains and loses from international trade, and why the gains exceed the losses.
- How tariffs and import quotas cause inefficiency and reduce total surplus.
- Why governments often engage in trade protection to shelter domestic industries from imports, and how international trade agreements counteract this.

Chapter Outline

Opening Example: Since 2002, Americans are eating more shrimp than tuna. Most of the shrimp is coming from Asia and Latin America. This example introduces the gains from trade and the distribution of these gains.

I. Comparative Advantage and International Trade

A. Production possibilities and comparative advantage, revisited

1. *Definition:* Goods and services purchased from other countries are **imports;** goods and services sold to other countries are **exports.**
2. A country has a comparative advantage in producing a good if the opportunity cost of producing the good is lower for that country than for other countries.
3. *Definition:* The **Ricardian model of international trade** analyzes international trade under the assumption that opportunity costs are constant.
4. *Definition:* **Autarky** is a situation in which a country cannot trade with other countries.
5. International trade allows each country to specialize in producing the good in which it has a comparative advantage. That leads to gains for both when they trade.
6. The text develops a numerical example of the production of computers and shrimp by the United States and Vietnam, respectively.

B. The gains from international trade

1. The consumption choices of countries reflect both the preferences of its residents and the relative prices in international markets.
2. Supply and demand determine the actual relative prices in international trade.

3. The text uses the Vietnam/United States example to demonstrate the gains from trade.
4. The Pitfalls in the chapter deal with the pauper labor fallacy: the argument that importing goods produced by "pauper labor" reduces the standard of living in the United States. The key to this misconception is the confusion between comparative advantage and absolute advantage.
5. Comparative advantage versus absolute advantage.

C. Sources of comparative advantage

1. Differences in climate. For example, tropical countries grow and export tropical products such as coffee, sugar, and bananas, whereas countries in temperate zones export crops such as wheat and corn.
2. Differences in factor endowments
   a. *Definition:* The **factor intensity** of production of a good is a measure of which factor is used in relatively greater quantities than other factors in production.
   b. *Definition:* According to the **Heckscher–Ohlin model,** a country has a comparative advantage in a good whose production is intensive in the factors that are abundantly available in that country.
   c. The opportunity cost of a given factor is low for a country that possesses an abundance of that factor.
   d. International specialization of production is often incomplete: Countries often maintain some domestic production of a good that they import.
3. Differences in technology. Superior production techniques can lead to comparative advantages, though it is somewhat mysterious why technology differs between countries.

II. Supply, Demand, and International Trade

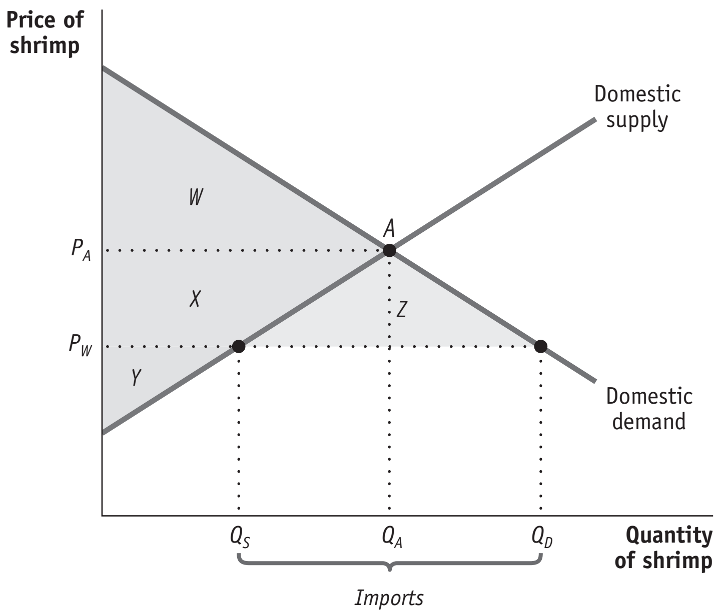
A. The effects of imports

1. *Definition:* The **domestic demand curve** shows how the quantity of a good demanded by domestic consumers depends on the price of that good.
2. *Definition:* The **domestic supply curve** shows how the quantity of a good supplied by domestic producers depends on the price of that good.
3. In autarky, the equilibrium in a market is determined by the intersection of the domestic demand and domestic supply curves.
4. *Definition:* The **world price** of a good is the price at which that good can be bought or sold abroad.
5. As a result of imports, domestic consumers gain and domestic producers lose, but the gain to consumers exceeds the loss to producers. This is illustrated in text Figure 5-7 (Figure 8-7), shown on the next page.
6. Note that although a country as a whole gains from trade, some groups lose.

B. The effects of exports

1. Exports also lead to an overall gain in total surplus for the exporting country.

The Effects of Imports on Surplus



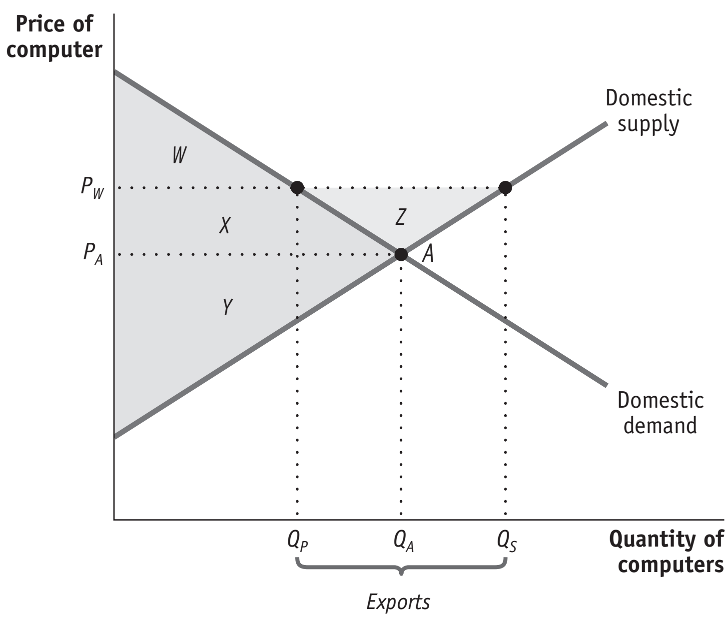
	Changes in surplus	
	Gain	Loss
Consumer surplus	$X + Z$	
Producer surplus		$-X$
Change in total surplus	**+Z**	

2. As a result of exports, domestic consumers lose and domestic producers gain, but the gain to producers exceeds the loss to consumers. This is illustrated in text Figure 5-9 (Figure 8-9), shown below.

C. International trade and wages

1. International trade tends to raise the prices of factors that are abundantly available and reduce the prices of factors that are scarce.

The Effects of Exports on Surplus



	Changes in surplus	
	Gain	Loss
Consumer surplus		$-X$
Producer surplus	$X + Z$	
Change in total surplus	**+Z**	

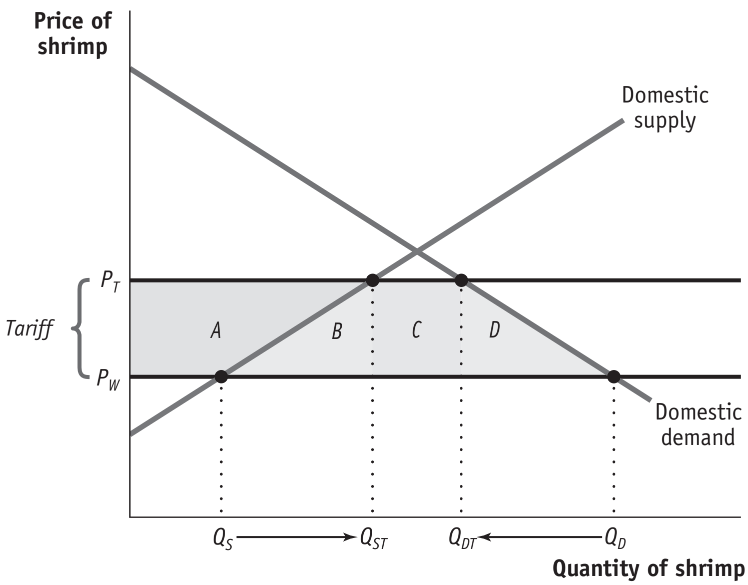
2. *Definition:* **Exporting industries** produce goods and services that are sold abroad.
3. *Definition:* **Import-competing industries** produce goods and services that are also imported.
4. U.S. exports tend to be human-capital-intensive and U.S. imports tend to be unskilled-labor-intensive. This suggests that international trade raises the wage rate of highly-educated workers and reduces the wage rate of unskilled workers in the United States.

III. The Effects of Trade Protection

A. The effects of a tariff

1. *Definition:* An economy has **free trade** when the government does not attempt either to reduce or to increase the levels of exports and imports that occur naturally as a result of supply and demand.
2. *Definition:* Policies that limit imports are known as **trade protection** or simply as **protection.**
3. *Definition:* A **tariff** is a tax levied on imports.
4. In the past, tariffs were an important source of government revenue because they were relatively easy to collect.
5. Today, tariffs are usually intended to discourage imports and protect import-competing domestic producers.
6. Tariffs raise both the price received by domestic producers and the price paid by domestic consumers.
7. With a tariff, producers gain, consumers lose, and the government gains, but consumer losses are greater than the sum of producer and government gains. There is a net reduction in total surplus. This is illustrated in text Figure 5-11 (Figure 8-11), shown below.

A Tariff Reduces Total Surplus



	Changes in surplus	
	Gain	Loss
Consumer surplus		$-(A+B+C+D)$
Producer surplus	A	
Government revenue	C	
Change in total surplus		**−(B + D)**

B. The effects of an import quota
   1. *Definition:* An **import quota** is a legal limit on the quantity of a good that can be imported.
   2. Import quotas are similar to tariffs, except that the money that would otherwise have been government revenue becomes quota rents to license-holders.

IV. The Political Economy of Trade Protection

A. Arguments for Trade Protection
   1. There are three common arguments for trade protection.
      a. *National security:* Overseas sources of crucial goods such as oil are vulnerable to disruption, so a country should be self-sufficient in these goods.
      b. *Job creation:* Import-competing industries create jobs.
      c. *Infant industry argument:* New industries need a temporary period of trade protection to become established.

B. The politics of trade protection
   1. Much trade protection has little to do with the above arguments.
   2. Trade protection usually reflects the political influence of import-competing producers.
   3. Producers are usually a smaller and more cohesive body than the consumers who lose from trade restrictions. Thus, producers wield more political influence.

C. International trade agreements and the World Trade Organization
   1. Trade protection hurts domestic consumers and foreign export industries. Therefore, countries care about each others' trade policies.
   2. *Definition:* **International trade agreements** are treaties in which a country promises to engage in less trade protection against the exports of other countries in return for a promise by other countries to do the same for its own exports.
   3. *Definition:* The **World Trade Organization** oversees international trade agreements and rules on disputes between countries over those agreements.

D. New challenges to globalization
   1. Globalization and inequality.
   2. Outsourcing and economic insecurity.

Teaching Tips

Comparative Advantage and International Trade

Creating Student Interest

Ask students to write down five imported goods they have purchased. If they need help, suggest that they check the tags on their clothing!

Ask students why they did not produce their own breakfast. Why did it make more sense to purchase their breakfast from people who specialize in the production of breakfast foods?

Presenting the Material

Use an example to explain differing comparative advantages between two countries. Make clear that each country has a fixed amount of resources that can be used to produce cars or wheat.

	One possibility	The other possibility
United States:		
Wheat	30	0
Autos	0	60
Canada:		
Wheat	80	0
Autos	0	40

The United States has the absolute advantage in autos, and Canada has the absolute advantage in producing wheat. To understand why these two countries trade, we have to compute their comparative advantages.

This can be illustrated algebraically by:

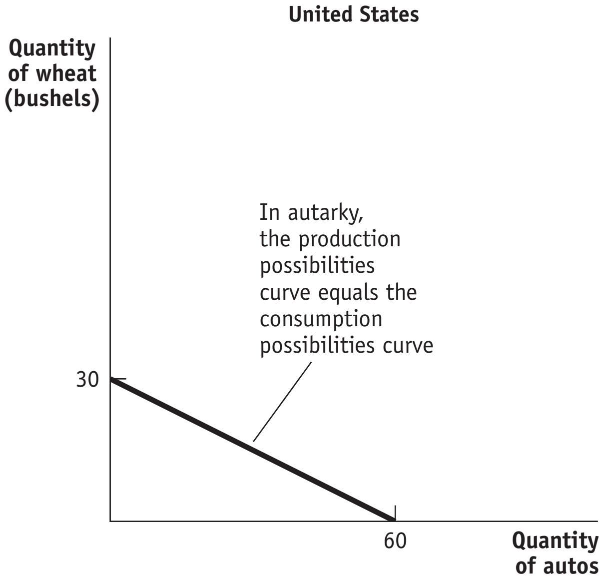
For the United States: 30 wheat = 60 autos
1 wheat costs 2 autos

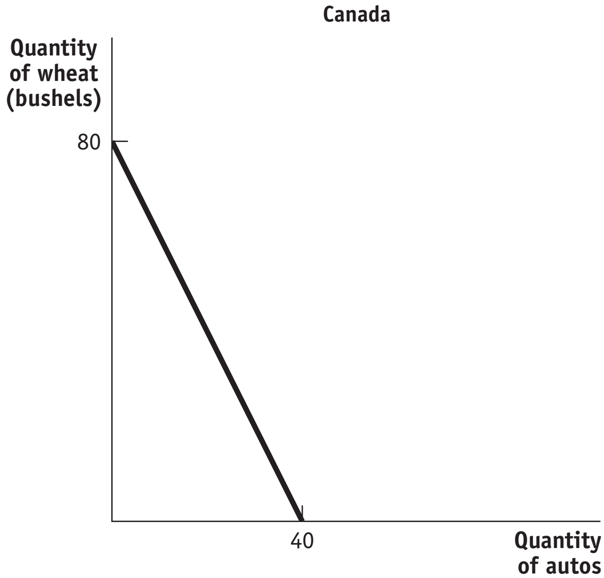
For Canada: 80 wheat = 40 autos
1 wheat costs 1/2 autos

Or use a table:

Product	United States (opportunity cost)	Canada (opportunity cost)
1 bushel of wheat	60/30 = 2 autos	40/80 = 1/2 autos
1 auto	30/60 = 1/2 bushels of wheat	80/40 = 2 bushels of wheat

The United States has the comparative advantage in auto production and Canada has the comparative advantage in wheat production. You can use a production possibility graph to illustrate their different production capabilities, as shown on the next page.





The United States and Canada will agree on the *terms of trade* between autos and wheat that meets the following conditions:

$\frac{1}{2}$ autos < 1 wheat < 2 autos

If they agree to trade 1 bushel of wheat for 1 auto, each country will gain from trade. Canada will specialize in the production of wheat and export wheat. If Canada gets more than $1/2$ auto for each unit of wheat, it gains. The United States will import wheat at a price that is cheaper than what it costs the United States to produce it.

Supply, Demand, and International Trade

Creating Student Interest

Ask students to give examples of products that are associated with a specific country (wine and France, clothing and China, diamonds and South Africa, United States and food, Switzerland and watches). Why do they think we buy goods from these other countries rather than producing them ourselves? (The goods would cost more if we tried to produce them. Some we would not be able to produce at all and others would be of lower quality.)

Presenting the Material

To explain the *impact of imports* on domestic supply and demand, guide students through the logical steps below. Assuming that the world price is below the domestic price, ask:

- If the world price is below the domestic price, what do imports do to the domestic supply of roses? (The domestic supply decreases but the total supply increases)
- What does the increased supply of imported roses do to the domestic price of roses? (It causes it to fall.)
- What does the lower price do to domestic producers' incentive to produce? (They have less incentive to produce.)
- What does a lower price do to the quantity demanded by domestic consumers? (The quantity demanded increases.)
- Does the amount of consumer surplus increase or decrease? (It increases.)
- What happens to domestic producer surplus? (It falls.)

To explain the *impact of exports* on domestic supply and demand, guide students through the logical steps below. Assuming that the world price is higher than the domestic price, ask:

- If the world price is higher than the domestic price, what will domestic producers want to do? (Export and earn the world price.)
- What does the quantity exported do to the domestic price? (It increases the domestic price.)
- What does a higher domestic price do to the quantity consumed domestically? (Quantity demanded will fall.)
- What has happened to the domestic consumer surplus? (It has fallen.)
- What has happened to the domestic producer surplus? (It has increased.)

The Effects of Trade Protection

Creating Student Interest

Have students brainstorm reasons why a country (or a group within a country) might want to impose a tariff.

Presenting the Material

Before illustrating the impact of a tariff with a supply and demand graph, ask students to track the impact of a tariff. Assume that the world price of steel is lower than the domestic price of steel.

A tariff will:

- Decrease the quantity of imported steel.
- Raise the domestic price of the steel.
- Reduce the quantity demanded by steel buyers.
- Increase the profits of domestic producers of steel.
- Increase employment in the domestic steel industry.
- Generate consumer losses that exceed producer and government gains.

The Political Economy of Trade Protection

Creating Student Interest

Show students (or have them view prior to class) the websites of the U.S. Business and Industry Council (http://www.americaneconomicalert.org/) and the Cato Institute (http://www.cato.org/pubs/policy_report/v23n4/freetrade.pdf) showing their views on free trade policy. Ask students why they think these two groups have such different views of protectionism/free trade.

Ask students why there are protests at meetings of the World Trade Organization.

Workers in the flower market in Colombia are exposed to 27 different types of pesticides. Ask students if we can improve their working conditions by refusing to buy imported flowers.

Presenting the Material

Discuss the rationale for trade protection and talk about the weaknesses of each of these arguments.

Arguments for protection	Problems with protectionist arguments
1. ***National security.*** The United States does not want to depend on an import that is necessary for national defense.	Some industries, such as sugar, have argued for protection based on national security grounds, a clearly spurious argument.
2. ***Job Creation.*** The United States wants to limit the number of jobs lost to trade.	Jobs lost in import-competing industries are offset by job gains in export-competing industries. Countries often retaliate against a tariff by enacting tariffs on American goods.
3. ***Infant industries.*** Some industries need protecting until they are more fully developed and ready to compete in global trade.	It is difficult to determine when an industry emerges from an "infant" position.

Common Student Pitfalls

- **Absolute versus comparative advantage.** Students are often confused about the difference between absolute and comparative advantage. *Absolute advantage* refers to a country's ability to produce a good (with given inputs). *Comparative advantage* refers to a country's ability to produce a good at a lower opportunity cost. Just because one country may be better able to produce all goods doesn't mean that other countries shouldn't produce at all (that would be a waste of resources!). They should produce the goods and services that they can produce relatively well ("least worse"). Opportunity cost is used to identify what a country can do relatively better (that is, at lower opportunity cost).

  You can liken this example to students completing a group project. One student might be much better at all tasks, but that doesn't mean that the other students should do nothing—that would lead to inefficient production (a low grade). The group is better off if students find what each can do relatively better and each contributes that production to the group.
- **Calculating comparative advantage.** Students may wonder why the PPFs in this chapter are straight lines rather than curves convex to the origin. Point out that we drop the assumption of diminishing returns when discussing international trade.

  Students easily get confused when doing numerical problems to determine which country has the comparative advantage. Carefully review several examples, showing how to calculate opportunity cost and then how opportunity cost determines comparative advantage.

  Students may be unclear about the meaning of *autarky*. Explain that it refers to a situation in which the public policy of a country is not to engage in international trade. The country would be completely self-sufficient.

  Students need to understand that specialization is the key to the increase in world output as a result of trade. Explain that when countries produce what they do relatively best, world output increases.
- **The effects of protectionism.** Students think that protectionist measures do not have reciprocal effects. Explain that U.S. tariffs can trigger retaliation from its trading partners. Trade wars can reduce exports and hurt economic growth.

  Students think that trade hurts all American jobs. Make the distinction between import-competing industries, where jobs are lost, and exporting industries, where jobs are added as a result of trade.

  Many students believe that global corporations exploit labor in the countries where they hire labor. The text argues that most of these jobs pay relatively higher wages than the prevailing domestic wages.

Case Studies in the Text

Economics in Action

Skill and Comparative Advantage—This EIA presents the "Leontief Paradox" that found America's comparative advantage is in something other than capital-intensive goods. In fact, the U.S. exports are skill-intensive (human capital intensive).

Ask students the following questions:

1. What was the "Leontief paradox"? (Many economists assumed that because the United States is capital-intensive in its production of goods, its exports would be capital-intensive. Leontief found that this was not true; U.S. exported goods had a slightly lower capital-to-labor ratio than the goods it imported.)
2. How is this paradox explained? (It depends on the definition of capital. U.S. exports use more human capital than physical capital in their production.)

Trade, Wages, and Land Prices in the Nineteenth Century—This EIA looks at trade in the 1800s between land-abundant countries such as the United States and Canada and land-scarce countries (Europe).

Ask students the following questions:

1. What triggered the explosion of international trade after the 1870s? (The invention of the steam engine and the expansion of railroads.)
2. What happened to the price of agricultural products in land intensive countries? (Agricultural exports reduced the domestic supply and caused the price to rise.)
3. What happened to the price of land in England? (It fell as agricultural imports increased.)
4. Who were the winners and losers from this change? (Workers in Europe enjoyed cheaper food and landowners were hurt by falling land prices.)

Trade Protection in the United States—This EIA explains that the U.S. economy is largely free trade, except in the agriculture and clothing/textiles industries.

Ask students the following questions:

1. On what two markets does the United States enact trade barriers? (Agricultural products and textiles.)
2. Does the United States have a comparative advantage in these industries? (No.)
3. How do foreign producers earn quota rents? (The United States awards import quota rights, and these rights are resold to other countries.)

The Doha Deadlock—This EIA discusses trade negotiations (the nine "rounds" since WWII) and explains the inability to reach an agreement at the 2001 trade round in Doha, Qatar.

Ask students the following questions:

1. What change are the wealthier countries participating in the Doha Round seeking from the negotiations? (Reduced trade protection for manufactured goods.)
2. What are the poorer countries participating in the Doha Round seeking from the negotiations? (Reduced subsidies for agricultural production.)

For Inquiring Minds

Increasing Returns and International Trade—This FIM explains how increased productivity with larger quantities can lead to a comparative advantage and international trade.

Chinese Pants Explosion—This FIM looks at how trade restrictions affect the quantity of clothing traded.

Global Comparison

Productivity and Wages Around the World—Wages and productivity are used to explain the pauper labor argument and sweatshop labor argument fallacies.

Activities

Who Has the Comparative Advantage? (10 minutes)

For this activity, ask students to bring extra sheets of white paper and a textbook. Pair students and tell them you are going to test for comparative advantage in their ability to turn pages and fold paper with one hand only. Tell students that you are going to set the timer for one minute; during that time, one student in the pair folds as many sheets of paper as he or she can with one hand. Then set the timer for the same student to turn book pages with one hand. Finally, time the other student on both tasks.

Ask students to set up a table that will help them calculate which of them has the comparative advantage in paper folding and which has the comparative advantage in page turning (the quantities in the table are hypothetical).

Student	Paper folding per minute	Page turning per minute
Student A	5	10
Student B	7	15

What Jobs Are Lost? (5–10 minutes)

Trade negatively affects import-competing industries and helps exporting industries. Pair students and ask them to identify three import-competing industries and three exporting industries in the United States. (Import-competing industries include textiles, shoes, and toy production. Exporting industries include computers, telecommunications equipment, and software.)

Imported Sweets? (3–5 minutes)

Pair students and tell them to assume that the world price of sugar is lower than the domestic price of sugar. Assume that there are no barriers to trade. What will happen to consumers and producers of sugar in the domestic market? (Buyers of sugar will import the cheaper sugar from abroad. Domestic producers of sugar will have less incentive to produce sugar as the domestic price falls to world levels.)

A Sugar Quota (5–10 minutes)

Pair students and ask them to brainstorm the effects of one of the oldest protectionist measures in the United States: sugar quotas. Explain that Caribbean countries have a comparative advantage in the production of sugar, yet we block their imports. Ask students to consider the impact of the quota on sugar on consumers and producers in the United States. (Sugar prices in the United States are twice the world level.) How would doing away with sugar quotas help poor countries? (They gain income from exporting products for which they have a comparative advantage.)

What's the Price of a Tariff? (3–5 minutes)

Pair students and present the following scenario: The United States imposes a tariff on imported Canadian lumber on the grounds that Canadian firms "dumped" lumber in the United States below unit costs. Ask the pairs of students how the tariff will affect consumers and producers in the United States.

Pick a Trade Dispute (5–10 minutes)

Ask students to visit the World Trade Organization's website at www.wto.org (on the left of the screen under "Trade Topics" click on "Disputes") and investigate a current trade dispute. What countries and products are involved in the dispute? Pair students and ask them to share their findings with their partner and ask a few to report to the whole class.

Sweatshop Labor (5–10 minutes)

Cooperative Controversy (Warning: this can be a very controversial issue, and you may want to caution students to be open to all opinions): Divide the class in half and have one side take the pro position and the other take the con position on the following proposition: Should your college or university sell imported clothing items made in unhealthy and unsafe working environments? Assume that these clothing items are priced cheaper than comparable items produced in the United States. Then form pairs on each side of the issue. Have a pro pair join a con pair to share their arguments.

Web Resources

The following websites provide information related to international trade.

Foundation for Economic Education on teaching about comparative advantage: http://www.fee.org/Publications/the-Freeman/article.asp?aid=4962.

The U.S. Business and Industry Council is an organization "fighting for American companies and American jobs." Their website presents arguments for protectionism and includes a live U.S. trade deficit counter. Go to: http://www.americaneconomicalert.org/view_art.asp?Prod_ID=1070.

The Cato Institute view of free trade: http://www.cato.org/pubs/policy_report/v23n4/freetrade.pdf.