

Overview of Section II

International Trade Policy

The second part of the textbook, Section II, has four chapters:

- Chapter 8** The Instruments of Trade Policy
- Chapter 9** The Political Economy of Trade Policy
- Chapter 10** Trade Policy in Developing Countries
- Chapter 11** Controversies in Trade Policy

■ Section II Overview

Trade policy issues figure prominently in current political debates and public policy discussions. The first two chapters of this section of the text introduce you to the instruments of trade policy and the arguments for free trade and managed trade. The second two chapters of this section consider the usefulness of trade policies in the context of specific types of countries facing similar problems. Throughout Section II the textbook presents a number of case studies—real world examples that clearly illustrate the theoretical arguments.

Chapter 8 begins by defining various instruments of trade policy, including tariffs, quotas, export subsidies, voluntary export restraints, and local content requirements. The effects of these policies on prices and trade volumes are determined. The chapter reviews the analytical tools of consumer and producer surplus, and uses these tools to consider the welfare effects of various protectionist measures. Specific incidents of trade restrictions are presented as case studies, including import quotas on sugar entering U.S. markets, voluntary export restraints on Japanese autos, and local content requirements on American buses made in Hungary.

Chapter 9 presents the set of ideas known as the political economy of trade theory. These ideas enable you to understand why certain trade restrictions exist, despite the force of general economic arguments which suggest that these restrictions reduce aggregate welfare. Possible motivations for trade restrictions are those which increase national welfare, such as the optimum tariff, and those which foster either income redistribution or the preservation of status quo. While sometimes politically popular, these motivations for trade restrictions ignore the possibility of retaliation and usually fail tests that are based upon basic welfare analysis. Trade agreements of the 1990s are discussed, including the formation of the World Trade Organization (WTO), and distinctions are made between Free Trade Areas and Customs Unions as well as between trade creation and trade diversion.

Chapter 10 considers the possible uses of trade policies to promote the growth of developing economies. The chapter reviews the relative successes of different development strategies. It examines arguments for and the results of import-substituting industrialization. It also discusses the decline of import-substituting industrialization and the increase in trade liberalization in developing countries since the mid-1980s. The chapter concludes with a discussion of export-led growth and the experience of the high-performing Asian economies.

Chapter 11 considers recent controversies in trade policy. The first part of the chapter considers the notion of strategic trade policy, which first arose in the 1990s. Strategic trade policy refers to the use of trade (and other) tools for channeling resources to sectors targeted for growth by industrial country governments. The chapter presents some commonly voiced arguments for intervention in particular sectors of the economy, and then shows how these arguments are critically flawed. The second part of the chapter introduces more sophisticated arguments for strategic trade policy. The most persuasive of these is the existence of some form of market failure. The second part of the chapter considers the impact of rising trade on workers in developing countries, and more broadly, the debate over globalization. This debate has been argued in academia and policy circles, but also on the streets of Seattle, Genoa, and other cities hosting global economic summits. Finally, the chapter considers links between trade and the environment.

Chapter 8

The Instruments of Trade Policy

■ Chapter Organization

Basic Tariff Analysis

Supply, Demand, and Trade in a Single Industry

Effects of a Tariff

Measuring the Amount of Protection

Costs and Benefits of a Tariff

Consumer and Producer Surplus

Measuring the Costs and Benefits

Other Instruments of Trade Policy

Export Subsidies: Theory

Case Study: Europe's Common Agricultural Policy

Import Quotas: Theory

Case Study: An Import Quota in Practice: U.S. Sugar

Voluntary Export Restraints

Case Study: A Voluntary Export Restraint in Practice: Japanese Autos

Local Content Requirements

Box: American Buses, Made in Hungary

Other Trade Policy Instruments

The Effects of Trade Policy: A Summary

Summary

APPENDIX 1 TO CHAPTER 8: Tariff Analysis in General Equilibrium

A Tariff in a Small Country

A Tariff in a Large Country

APPENDIX 2 TO CHAPTER 8: Tariffs and Import Quotas in the Presence of Monopoly

The Model with Free Trade

The Model with a Tariff

The Model with an Import Quota

Comparing a Tariff and a Quota

■ Key Themes

This chapter and the next three focus on international trade policy. These chapters will provide valuable insights into the causes and implications of different types of protectionist policies. When you read newspapers you undoubtedly see various arguments for and against restrictive trade practices in the media. Some of these arguments are sound, and some are clearly not grounded in fact or theory. This chapter provides a framework for analyzing the economic effects of trade policies by first describing the tools of trade policy and then analyzing their effects on consumers and producers in domestic and foreign countries. Case studies provide perspective on actual episodes of restrictive trade practices.

The analysis presented here takes a partial equilibrium view, meaning that it focuses on demand and supply in one market, rather than pursuing the general equilibrium approach followed in previous chapters. Import demand and export supply curves are derived from domestic and foreign demand and supply curves. There are a number of trade policy instruments analyzed in this chapter using these tools. Some of the important instruments of trade policy include *specific tariffs*, defined as taxes levied as a fixed charge for each unit of a good imported; *ad valorem tariffs*, levied as a fraction of the value of the imported good; *export subsidies*, which are payments given to a firm or industry that ships a good abroad; *import quotas*, which are direct restrictions on the quantity of some good that may be imported; *voluntary export restraints*, which are quotas on trading that are imposed by the exporting country instead of the importing country; and *local content requirements*, which are regulations that require that some specified fraction of a good is produced domestically.

The import supply and export demand analysis demonstrates that the imposition of a tariff drives a wedge between prices in domestic and foreign markets. It increases prices in the country imposing the tariff and lowers the price in the other country by less than the amount of the tariff. When you consider whether tariffs are actually achieving their goal of protecting producers, you must consider both the effects of tariffs on the final price of a good, and the effects of tariffs on the costs of inputs used in production. The actual protection provided by a tariff will not equal the tariff rate if imported intermediate goods are used in the production of the protected good. The proper measurement, *the effective rate of protection*, is described in the text and calculated for a sample problem.

The analysis of the costs and benefits of trade restrictions require some tools of welfare analysis. The text explains the essential tools of consumer and producer surplus. The *consumer surplus* on each unit sold is defined as the difference between the actual price and the amount that consumers would have been willing to pay for the product. Geometrically, consumer surplus is equal to the area under the demand curve and above the price of the good. *Producer surplus* is the difference between the minimum amount for which a producer is willing to sell his product and the price which he actually receives. Geometrically, producer surplus is equal to the area above the supply curve and below the price line. Some of the problems in this chapter of the study guide provide you with an opportunity to practice these concepts for the different cases of tariffs, export subsidies, quotas, and voluntary export restraints.

The costs of a tariff include distortionary efficiency losses in both consumption and production. A tariff provides gains from terms of trade improvement when and if it lowers the foreign export price. Summing the areas in a diagram of internal demand and supply provides a method for analyzing the net loss or gain from a tariff.

Other instruments of trade policy can be analyzed with this method. An export subsidy operates in exactly the reverse fashion of an import tariff. An import quota has similar effects as an import tariff upon prices and quantities but revenues, in the form of quota rents, accrue to those licensed to import the protected good or the foreign producers themselves. Voluntary export restraints are a form of quotas in which the import licenses are held by foreign governments. Local content requirements raise the price of imports and domestic goods and do not result in either government revenue or quota rents. Throughout the chapter the analysis of different trade restrictions are illustrated by drawing upon specific episodes. Europe's common agricultural policy provides an example of export subsidies in action. Voluntary export restraints are discussed in the context of Japanese auto sales to the United States. Local content requirement effects are illustrated through the example of American buses that are partially made in Hungary.

The United States often criticizes countries like Japan for restrictions imposed on imports of U.S. agricultural products. However, the United States also protects many of its industries. In the textbook, the case study corresponding to quotas describes trade restrictions on U.S. sugar imports.

Another example of quotas in the United States occurs in the peanut market. The United States maintains a federal program that limits the number of farmers who can sell peanuts in the United States and comes close to forbidding the import of peanuts. The government provides assurances to farmers that their production costs will be recovered each year, and also sees to it that the minimum quota price for the quota peanuts is about 50 percent higher than peanut prices in world markets. This reaps tremendous gains to domestic peanut farmers at the expense of much higher prices on goods such as peanut butter and peanut oils.

There are two appendices to this chapter. Appendix 1 uses a general equilibrium framework to analyze the impact of a tariff, departing from the partial equilibrium approach taken in the chapter. When a small country imposes a tariff, it shifts production away from its exported good and toward the imported good. Consumption shifts toward the domestically produced goods. Both the volume of trade and welfare of the country declines. A large country imposing a tariff can improve its terms of trade by an amount potentially large enough to offset the production and consumption distortions. For a large country, a tariff may be welfare improving.

Appendix 2 discusses tariffs and import quotas in the presence of a domestic monopoly. Free trade eliminates the monopoly power of a domestic producer and the monopolist mimics the actions of a firm in a perfectly competitive market, setting output such that marginal cost equals world price. A tariff raises domestic price, and the monopolist, still facing a perfectly elastic demand curve, sets output such that marginal cost equals internal price. A monopolist faces a downward sloping demand curve under a quota. Thus, a quota is not equivalent to a tariff in this case. Domestic production is lower and internal price higher when a particular level of imports is obtained through the imposition of a quota rather than a tariff.

■ Key Terms

Define the following key terms:

1. Consumer Surplus _____

2. Production Distortion Loss _____

3. Consumption Distortion Loss _____

4. Terms of Trade Gain _____

5. Effective Rate of Protection _____

6. Quota Rent _____

■ Review Questions

1. Provided below is a chart of the Home country's domestic supply of and demand for wine at various price levels. Using this information, construct the Home country's import demand curve for wine. (Remember: the Home import demand is the excess of what Home consumers demand over what Home producers supply.)

Price per Bottle	Demand	Supply	Home Import Demand
\$ 5	95	25	_____
10	90	30	_____
15	70	50	_____
20	60	60	_____

2. Suppose a country, Home, wants to encourage the development of high definition flat panel televisions. The HDTVs with plasma displays are currently quite expensive, priced at \$6500 per television. The component used in making such televisions costs \$3000. Similar Foreign televisions can be imported at the world market price of \$5000.

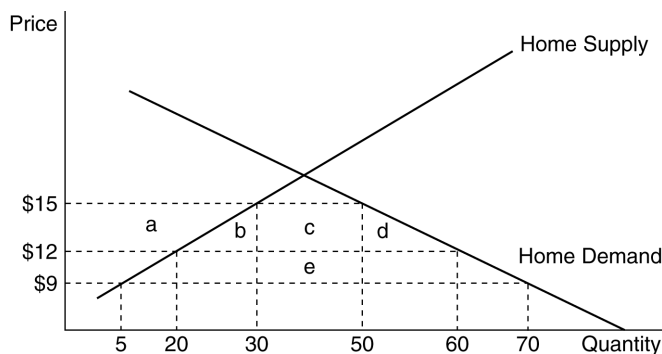
a. Using an infant industry argument, which claims that domestic manufacturers should be protected from foreign competition in certain young industries, would you recommend an ad valorem tariff? If so, how large should it be?

b. At this level of tariff, what is the effective rate of protection on assembly of domestic high definition televisions?

c. Who are the winners and who are the losers from this protection?

3. Suppose that Home imports vodka from Foreign at a world price of \$12 per bottle. The figure below depicts the importing country's market for vodka.

a. If Home decides to place a tariff on vodka imports such that it raises the domestic price to \$15 and lowers the Foreign export price to \$9, what is the impact on Home production and consumption?



b. How are the benefits and costs of this tariff distributed among consumers and producers?

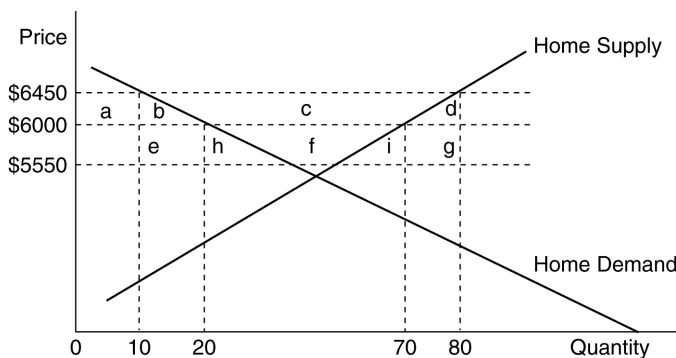
c. Assuming that the government is able to collect the full tariff revenues, calculate the direct government receipts from the tariff. Show this area on the preceding graph.

d. Suppose that vodka drinking consumers lobby against this restriction, but the government is unable to appeal the legislation. What other policy alternatives are available to the government?

e. Would your answers to any of the questions asked above change if the Home country were small in world markets rather than large?

4. Suppose that Home exports 50 tractors per year at a world trading price of \$6000. The Home government, seeking to expand the domestic tractor industry and its exports, places a \$900 specific export subsidy on tractors. This results in an increase in the Home price of tractors to \$6450 and a lowering of the Foreign market price to \$5550. The figure below depicts the exporting country's tractor market.

a. Why doesn't the new price for tractors at home fully reflect the export subsidy?



b. How are Home production and exports affected by the export subsidy?

c. What is the impact of the export subsidy on consumer surplus? Producer surplus? Government revenues?

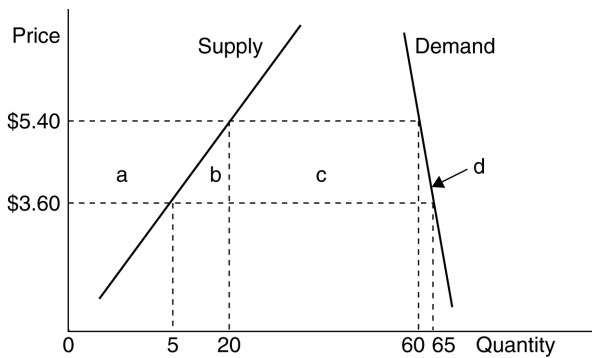
d. In terms of the graph above, which areas depict consumer surplus, producer surplus, and government revenues?

e. What is the effect of the export subsidy on the Home terms of trade?

5. Suppose that the Home country wants to protect the domestic cheese industry. It imposes a quota on the import of cheese. Since we observe that the world supply of cheese is highly elastic, this implies that the Home country is small in world markets (because the world market does not respond to Home's actions). Let the world price of cheese equal \$3.60 per pound and the Home (guaranteed) support price is equal to \$5.40 per pound. This implies that the right (license) to sell cheese in the Home market is worth \$1.80 per pound (\$5.40 minus \$3.60). The Home cheese market is depicted in the figure below.

a. Compare the imports of cheese under free trade with the imports under this quota system.

- b. In terms of the graph, what areas measure the changes of producer surplus and consumer surplus in Home markets?



- c. One way in which the imposition of a quota differs from that of a tariff is that, under a quota the quota revenues are collected by the holders of import licenses. Show the value of these quota rents in the graph.
- d. Is there a terms of trade effect of this trade policy? Does your answer depend on this being a quota or on some other factor?

■ Answers to Odd-Numbered Textbook Problems

1. The import demand equation, MD , is found by subtracting the Home supply equation from the Home demand equation. This results in $MD = 80 - 40 \times P$. Without trade, domestic prices and quantities adjust such that import demand is zero. Thus, the price in the absence of trade is 2.
3. a. The new MD curve is $80 - 40 \times (P + t)$ where t is the specific tariff rate, equal to 0.5. (*Note:* in solving these problems you should be careful about whether a specific tariff or ad valorem tariff is imposed. With an ad valorem tariff, the MD equation would be expressed as $MD = 80 - 40 \times (1 + t)P$.) The equation for the export supply curve by the Foreign country is unchanged. Solving, we find that the world price is \$1.25, and thus the internal price at home is \$1.75. The volume of trade has been reduced to 10, and the total demand for wheat at Home has fallen to 65 (from the free trade level of 70). The total demand for wheat in Foreign has gone up from 50 to 55.

- b. and c. The welfare of the Home country is best studied using the combined numerical and graphical solutions presented below in Figure 8-1.

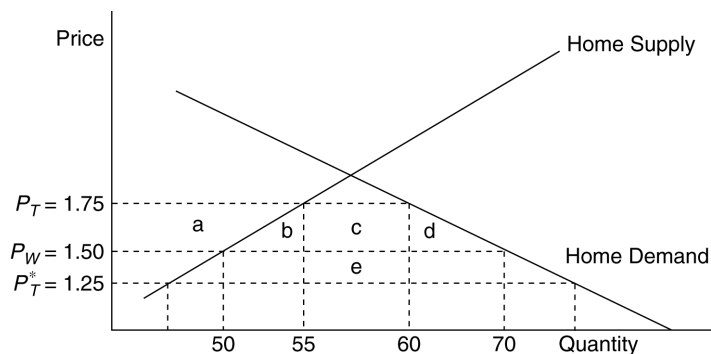


Figure 8-1

where the areas in the figure are:

$$a: 55(1.75 - 1.50) - 0.5(55 - 50)(1.75 - 1.50) = 13.125$$

$$b: 0.5(55 - 50)(1.75 - 1.50) = 0.625$$

$$c: (65 - 55)(1.75 - 1.50) = 2.50$$

$$d: 0.5(70 - 65)(1.75 - 1.50) = 0.625$$

$$e: (65 - 55)(1.50 - 1.25) = 2.50$$

Consumer surplus change: $-(a + b + c + d) = -16.875$. Producer surplus change: $a = 13.125$. Government revenue change: $c + e = 5$. Efficiency losses $b + d$ are exceeded by terms of trade gain e . (Note: In the calculations for the a , b , and d areas a figure of 0.5 shows up. This is because we are measuring the area of a triangle, which is one-half of the area of the rectangle defined by the product of the horizontal and vertical sides.)

5. $ERP = (200 \times 1.50 - 200)/100 = 100\%$.
7. We first use the foreign export supply and domestic import demand curves to determine the new world price. The foreign supply of exports curve, with a foreign subsidy of 50 percent per unit, becomes $XS = -40 + 40(1 + 0.5) \times P$. The equilibrium world price is 1.2 and the internal foreign price is 1.8. The volume of trade is 32. The foreign demand and supply curves are used to determine the costs and benefits of the subsidy. Construct a diagram similar to that in the text and calculate the area of the various polygons. The government must provide $(1.8 - 1.2) \times 32 = 19.2$ units of output to support the subsidy. Foreign producers surplus rises due to the subsidy by the amount of 15.3 units of output. Foreign consumers surplus falls due to the higher price by 7.5 units of the good. Thus, the net loss to Foreign due to the subsidy is $7.5 + 19.2 - 15.3 = 11.4$ units of output. Home consumers and producers face an internal price of 1.2 as a result of the subsidy. Home consumers surplus rises by $70 \times 0.3 + 0.5(6 \times 0.3) = 21.9$, while Home producers surplus falls by $44 \times 0.3 + 0.5(6 \times 0.3) = 14.1$, for a net gain of 7.8 units of output.

9. At a price of \$10 per bag of peanuts, Acirema imports 200 bags of peanuts. A quota limiting the import of peanuts to 50 bags has the following effects:
- The price of peanuts rises to \$20 per bag.
 - The quota rents are $(\$20 - \$10) \times 50 = \$500$.
 - The consumption distortion loss is $0.5 \times 100 \text{ bags} \times \$10 \text{ per bag} = \$500$.
 - The production distortion loss is $0.5 \times 50 \text{ bags} \times \$10 \text{ per bag} = \$250$.
11. It would improve the income distribution within the economy since wages in manufacturing would increase, and real incomes for others in the economy would decrease due to higher prices for manufactured goods. This is true only under the assumption that manufacturing wages are lower than all others in the economy. If they were higher than others in the economy, the tariff policies would worsen the income distribution.