International Political Economy

Interests and Institutions in the Global Economy

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CHAPTER 3

The Political Economy of International Trade Cooperation

Why does the World Trade Organization (WTO) exist? There are two ways to answer this question. One approach emphasizes the particular historical process that led to the WTO's creation. As we saw in Chapter 2, the United States had an economic interest in creating the General Agreement on Tariffs and Trade (GATT) after World War II, and it had the power required to do so. The world trade system was thus shaped by the specific configuration of power and interests in place following the Second World War. An alternative approach emphasizes a more abstract logic. In this more abstract logic, the WTO exists because it helps governments work together in pursuit of mutual gain. In this approach, the world trade system is treated as a specific instance of the more general problem of cooperation.

Cooperation is not always easily achieved, even when everybody recognizes that they all could gain from cooperation. Cooperation is often difficult because people often have strong incentives not to cooperate. These incentives are driven in part by a desire to take advantage of others and in part by a desire to avoid being taken advantage of. But regardless of whether people are trying to gain advantage, or whether they are simply trying to avoid being exploited, the behavior yields the same result—cooperation is stymied and people are worse off than they could be. Applied to world trade, this logic suggests that countries can gain substantially from cooperation aimed at liberalizing world trade. Yet, because some governments want to take advantage of others, but all governments want to avoid being exploited in this fashion, no government is willing to liberalize trade. Consequently, societies are deprived of the benefits that trade confers. In order for cooperation to emerge in any society, therefore, people must be assured that cooperation on their part will be met by cooperation from others.

Individuals cannot easily provide these assurances to each other. If you think someone wants to take advantage of you, you will probably disregard his or her request that you trust him or her. The necessary trust can emerge gradually over time. But if you can't cooperate with each other without trust, and if building trust requires cooperation, then you are stuck. Societies often solve this problem by creating institutions. Institutions

provide the necessary assurances by punishing people who try to take advantage of others. For example, every time you enter into a contract with someone, the power of the state stands behind you to ensure that you and the party you contract with comply with the agreement. Applied to world trade, this logic suggests that trade liberalization is possible only if an international institution like the WTO can ensure that all governments comply with the agreements they make. It does so by creating conditions that enable governments to enforce the agreements they conclude. The WTO exists, therefore, because it enables societies to cooperate and capture the welfare gains that trade offers.

This chapter develops this abstract logic of cooperation in three essential steps. First, we examine trade theory to gain a firm understanding of why trade offers welfare gains to all countries. This examination is important in its own right, but it also highlights the gains available from international cooperation aimed at liberalizing trade. Second, we examine why cooperation to capture the welfare gains available from trade is difficult using a standard model of cooperation, the prisoners' dilemma. Third, we examine how the WTO helps governments cooperate in order to liberalize trade and capture these welfare gains.

The Economic Case for Trade

Why should countries trade? The standard answer is that countries should trade because trade makes them better off. The reason why trade makes societies better off, however, can be tricky to grasp. The prominent economist Paul Krugman has argued that even many scholars and journalists who spend their lives writing about the global economy have a less than full understanding of why trade makes societies better off (Krugman 1997, 117–125). Because understanding the rationale for trade is central to understanding the global economy but can be difficult to grasp, we examine it in detail.

In thinking about why countries trade, we must answer two different questions. First, what precisely do we mean when we say that trade makes societies better off? That is, what are "gains from trade," how do economists conceptualize them, where do they come from, and who gets them? Second, we need to ask why trade necessarily generates these gains. Answering this question requires us to explore the logic of comparative advantage.

We explore these two questions using two different theoretical frameworks. The first framework is called a "partial equilibrium" model. This approach focuses on the market for a single commodity rather than on the entire economy (hence the name *partial*). It highlights how production and consumption of this single commodity change in response to trade. By doing so, it allows us to see exactly what is meant by gains from trade. The second framework is called a "general equilibrium" model. This approach focuses on the entire economy (hence the name *general*). It highlights how production and consumption of *all* goods in an economy change in response to trade. This approach not only highlights the gains from trade, but also illustrates the concept of comparative advantage, which is the underlying reason why these gains exist. Together, the two frameworks help us understand what the gains from trade are and why trade necessarily creates them.

The Gains from Trade in Partial Equilibrium

The simplest way to illustrate the gains from trade is to examine what happens in the market for a single commodity when a country shifts from autarky to trade. We start with an autarkic country, that is, a country that does not engage in any trade. The domestic market for a single commodity, say shirts, is represented in panel A of Figure 3.1. The horizontal axis represents quantity, that is, the number of shirts demanded by domestic consumers and supplied by domestic manufacturers. The vertical axis represents the price of shirts. The figure also provides demand and supply curves. The demand curve, the downward sloping line labeled *d*, tells us the total number of shirts that domestic consumers will buy at every price. This curve slopes down because consumers will buy more shirts as their price falls. The supply curve, the upward sloping line labeled *s*, tells us the total number of shirts that domestic producers will supply at every price. The supply curve slopes up because domestic producers will supply more shirts as the price rises. The number of shirts that will be produced and consumed at equilibrium, as well as the price for which they will sell, will be determined by the intersection of the supply and demand curves. Therefore, the quantity of shirts produced is Q and these shirts will sell at price p.

We now need to introduce two concepts: consumer surplus and producer surplus. Producer and consumer surplus are aggregate measures of welfare. Consider consumer surplus first. If you look at the demand curve, you will notice that a few people (those represented by the top-left portion of the demand curve) are willing to pay a high price to buy shirts. Yet, these people are able to purchase shirts at the much lower market price. The difference between what these people are willing to pay and the market price that they do pay provides them a surplus. Consumer surplus aggregates all of these individual consumer gains. Total consumer surplus is equal to the area below the demand curve and above the price line.

Producer surplus is the analogous concept on the supply side. Some producers (those represented by the lower left portion of the supply curve) are willing to supply shirts at a relatively low price. Yet, when these producers sell their shirts, they receive the much higher market price. The difference between how much each producer is willing to receive to produce shirts and what each does receive represents that producer's surplus. Producer surplus aggregates all of these individual producer gains. It is equal to the area above the supply curve and below the price line. Together, consumer and producer surplus depict the amount and the distribution of social welfare generated in this market.

We can now examine what happens to equilibrium shirt production and consumption when the United States shifts from autarky to free trade (panel B). When trade occurs, the price of shirts is determined by the interaction between world supply and demand. Because most national economies are small in relation to the world economy, each country's individual demand for and supply of goods will not affect total world demand or total world supply. Therefore, domestic shirt producers and consumers have no influence on the price of the shirts sold in the domestic market. This logic is identical to that of individual producers and consumers operating in a perfectly competitive market, where each individual is a "price taker." Rather than focus on an individual in the domestic market, here we focus on a national economy in the global economy. And,

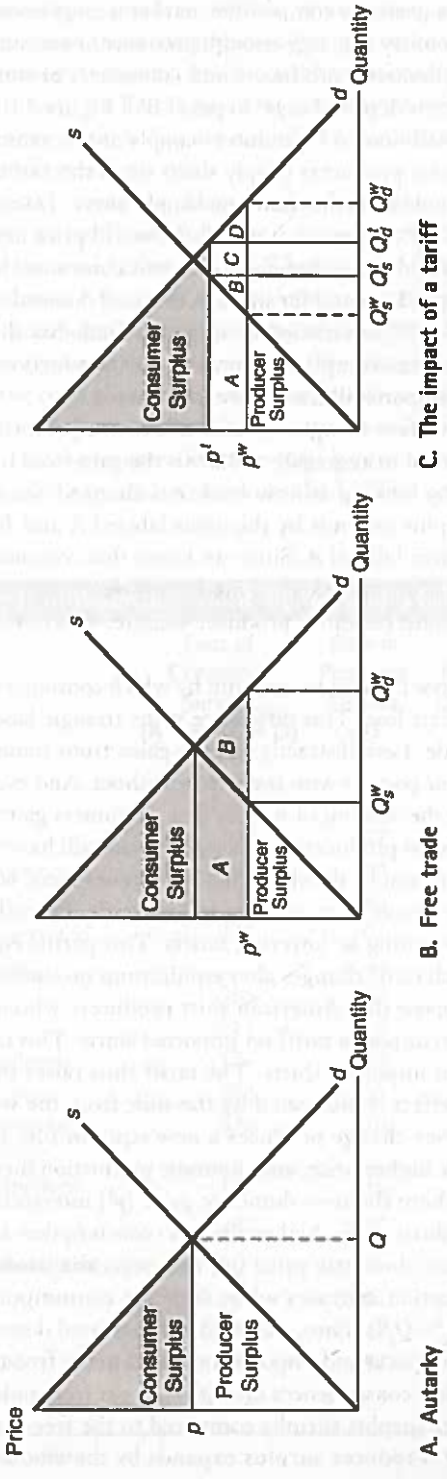


Figure 3.1 Trade in Partial Equilibrium.

just as no individual in a perfectly competitive market is large enough to alter prices in that market, no single country is a large enough producer or consumer of shirts to affect the world price. Thus, domestic producers and consumers of shirts are "world price takers." This world price is depicted as p^w in panel B of Figure 3.1.

How many shirts will domestic producers supply and domestic consumers buy at the world price? Domestic producers supply shirts up to the amount Q_s^w, the point at which the world price intersects the domestic supply curve. Domestic consumers buy shirts up to the amount Q_d^w, the point at which the world price intersects the domestic demand curve. At the world price, therefore, domestic consumers buy more shirts than domestic producers supply. Demand for shirts in excess of domestic shirt production, an amount equal to $(Q_d^w - Q_s^w)$, is satisfied by imports. Trade has thus changed equilibrium shirt production and consumption. Domestic shirt production falls, domestic shirt consumption rises, and imports fill the difference between.

Aggregate social welfare is higher under this new equilibrium than it is under autarky. This improvement in aggregate welfare is the gain from trade. We can see this welfare improvement by looking at how trade has changed consumer and producer surplus. Consumer surplus expands by the areas labeled *A* and *B*, whereas producer surplus shrinks by the area labeled *A*. Since we know that consumer surplus measures consumer welfare, we know that trade has made consumers better off. And because we know that producer surplus measures producer welfare, we know that trade has made producers worse off.

Gains from trade arise because the amount by which consumers gain is greater than the amount that producers lose. This difference is the triangle labeled *B*, and it represents the gain from trade. Less abstractly, society gains from trade because consumers have more money in their pockets with trade than without. And even though producers lose money from trade, the amount of money that consumers gain is so large that they could fully compensate shirt producers for their losses and still have more money in their pockets. This is what is meant by the claim that trade raises social welfare.

Rarely do countries move from autarky to free trade. Instead, governments typically influence trade by raising or lowering tariffs. This partial equilibrium approach allows us to see how such tariff changes alter equilibrium production and consumption and social welfare. Suppose that American shirt producers who lose from trade convince the government to impose a tariff on imported shirts. This tariff is a tax that the government imposes on imported shirts. The tariff thus raises the domestic price of shirts. In panel C this effect is illustrated by the shift from the world price p^w to the higher price p^t. The price change produces a new equilibrium. Domestic producers supply more shirts at the higher price, and domestic production therefore expands from Q_s^w to Q_s^t (the point where the new domestic price $[p^t]$ intersects the supply curve). Consumers buy fewer shirts at the higher price, so consumption falls from Q_d^w to Q_d^t the point where the new domestic price $[p^t]$ intersects the demand curve). Finally, because domestic production increases while domestic consumption falls, imports fall (from $[Q_d^w - Q_s^w]$ to $[Q_d^t - Q_s^t]$). Thus, the tariff has increased domestic production and reduced domestic consumption and imports compared to the free-trade world.

What are the welfare consequences of shifting from free trade to this tariff-based equilibrium? Consumer surplus shrinks compared to the free-trade case by the area labeled *A*, *B*, *C*, and *D*. Producer surplus expands by the amount equal to the area

labeled *A*. The tariff thus transfers welfare from consumers to producers. The area labeled *C* is transferred from consumers to the government as tariff revenue. This revenue may be spent on government services that benefit consumers, so it does not necessarily reflect a consumer loss. This leaves regions *B* and *D*, which represent efficiency losses: losses of consumer surplus that are not offset by an increase in producer surplus or by government tariff revenue.

Efficiency losses take two forms. The triangle labeled *D* is a consumption distortion loss. It arises because the tariff causes domestic consumers to buy too few shirts given their preferences and the world price of shirts. The triangle labeled *B* is a production distortion loss. It arises because the tariff causes domestic producers to produce too many shirts, given domestic production costs and the world price (Krugman and Obstfeld 1994). Together, these represent the welfare losses that give protectionism a bad name.

How large are the costs of protection and how much would the United States gain if existing protection was dismantled? We can put real dollar figures on these abstract concepts (Table 3.1). Total consumer losses in the 11 most heavily tariff-protected sectors in the American economy amount to almost $2.3 billion per year. Even though the

Table 3.1 The Costs of Protection in the United States (Millions of Dollars)

Product Category	Loss of Consumer Surplus (A + B + C + D)	Gain in Producer Surplus (A)	Tariff Revenue or Quota Rents (C)	Deadweight Loss (B + D)
Tariffs				
Ball Bearings	64	13	50	1
Canned Tuna	309	127	172	10
Ceramic Articles	102	18	81	2
Ceramic Tiles	139	45	92	2
Frozen Concentrated Orange Juice	281	101	145	35
Glassware	266	162	95	9
Luggage	211	16	169	26
Polyethylene Resins	176	95	60	20
Rubber Footwear	208	55	141	12
Women's Footwear, except athletic	376	70	295	11
Women's Handbags	148	16	119	13
Total	2,280	718	1,419	141
Voluntary Export Restraints				
Apparel	21,158	9,901	8,956	2,301
Textiles	3,274	1,749	1,345	181
Machine Tools	542	157	350	35
Total	24,974	11,807	10,651	2,517

Source: Hufbauer and Elliot 1994.

magnitude of this loss varies across sectors, from $376 million in women's footwear to $64 million in the ball-bearing industry, consumers are made worse off by the imposition of a tariff in every instance. The **voluntary export restraints** (VERs) in apparels alone cost consumers more than $21 billion. All VERs reduce consumer surplus by almost $25 billion. In total, therefore, American protection costs American consumers more than $27 billion. Producers capture a large share of these consumer losses. Tariff protection yields about $718 million of extra income for producers, and the VERs provide an additional $12 billion. Producer gains vary across industries, from $162 million for glassware producers to $13 million for ball-bearing producers, but they always gain from protection.

A portion of consumer losses are transferred to the U.S. government and to foreign producers. Tariff protection provides the U.S. government with about $1.4 billion in revenue. VERs provide quota rents to foreign producers. Quota rents are above-market returns created by the quota. Rents arise because quotas restrict the number of foreign goods that can be sold in the domestic market below the level that domestic consumers want to buy. With supply held below demand, foreign producers can charge a higher price for each good they sell. Suppose, for example, that during the 1980s American consumers wanted to buy 4 million Japanese cars at the market price. The VER that the United States negotiated with Japan, however, allowed Japan to export only 2.3 million cars to the United States. Because the VER kept the number of Japanese cars supplied to the American market substantially below the number Americans wanted to buy, each Japanese car sold at a higher price than it would have without the VER. The quota rent is the difference between the high price Japanese auto producers received for each car with the VER and the lower price they would have received in the absence of the VER. In the apparel industry, which has been heavily protected with quotas, rents equaled almost $9 billion per year. Total transfers from American consumers to the U.S. government as tariff revenue and to foreign producers as quota rents amount to about $12 billion.

The efficiency losses are moderate but still significant. Overall, American society loses more than $2.5 billion per year as a direct result of protection in these 14 sectors. Whether we consider these losses to be substantial depends in part upon the context we use to evaluate them. They are small as a percentage of total American income, amounting to less than 1 percent of American GNP per year. This amount may seem even smaller if we apportion it equally across all the people who participate in the American economy—only about $13 per person, per year. Paying such a low price to protect American workers' jobs in these industries may seem reasonable. We get a different picture if we consider how much it costs to save a single job. Every job that protection saves costs American consumers $170,000 per year, an amount that is about six times the average annual income for the typical manufacturing worker. This cost falls substantially to $54,000 per job if we consider only the efficiency losses rather than the total loss of consumer surplus. But even this lower figure is substantially higher than the average annual income of manufacturing workers (Hufbauer and Elliott 1994, 11). Seen in this context, the costs of protection are rather high.

This partial equilibrium framework thus provides concrete meaning to the idea of gains from trade. It highlights two important aspects of these gains in particular. First, the gain from trade is a welfare gain—society enjoys greater welfare with trade than it does without trade. Second, individuals, in their role as consumers, capture these gains.

That is, trade allows individuals to consume more products for the same amount of money than they can without trade. This means that every dollar a consumer earns goes further in the market place. Trade thus raises consumer income.

The Gains from Trade in General Equilibrium

The partial equilibrium framework helps us understand the gains from trade, but it doesn't help us understand why these gains exist or, more profoundly, why these gains must exist for every country. Nor does it help us think about the broader economic consequences of international trade. To grasp these issues we need to examine a general equilibrium model of trade. A general equilibrium model examines how trade alters equilibrium production and consumption in the economy as a whole. Thus, whereas in the partial equilibrium model we see shirt production fall as imports rise, in the general equilibrium model we can see that as shirt production falls, production of other goods rises. The standard general equilibrium model of trade, which we develop here, is called the 2 × 2 × 2 model, as it is based on two countries, each of which produces two goods using two factors of production.

To develop this general equilibrium model, we must first establish a few core concepts. The first is the production possibility frontier (PPF). Countries are endowed with factors of production in finite amounts. Consequently, any decision to use factors to produce one good necessarily means that these factors are not available to produce other goods. A decision to allocate capital and labor to the production of computers, for example, necessarily requires the country to forgo the production of some number of shirts. These forgone shirts are what economists call opportunity costs, and the production possibility frontier allows us to measure these opportunity costs quite precisely.

Consider an illustrative PPF for the United States. Let's assume that the United States has a fixed stock of labor and capital that it can use in combination to produce two goods—shirts and computers. Suppose that if the United States allocates all of its labor and capital to computer production, it could produce 100 million computers (point *A* in Figure 3.2) and if it allocates all labor and capital to shirts, it can produce 300 million shirts (point *B* in Figure 3.2). If we connect *A* and *B* with a line, we have defined a production possibility frontier for the United States. Along it lie all combinations of shirts and computers that the United States can produce using all of its factors of production. As we move from *A* to *B*, capital and labor are reallocated away from computer production to shirt production. The slope of the line, called the marginal rate of transformation, tells us exactly how many shirts the United States forgoes for each computer it produces. In this example, every computer the United States produces costs three shirts. Because an autarkic country cannot consume more than it produces, the PPF also defines the limits of possible consumption.

We can draw the PPF either as a straight line, as in our example, or as a curved line. Which we select depends upon the assumption we make about the nature of the opportunity costs that the United States faces. A straight PPF embodies the assumption that the United States faces constant opportunity costs. Every additional computer always costs 3 shirts. If we assume constant opportunity costs, we also implicitly assume that the United States enjoys constant returns to scale in production. This means that whenever the factors employed in shirt production are increased by some factor, we will

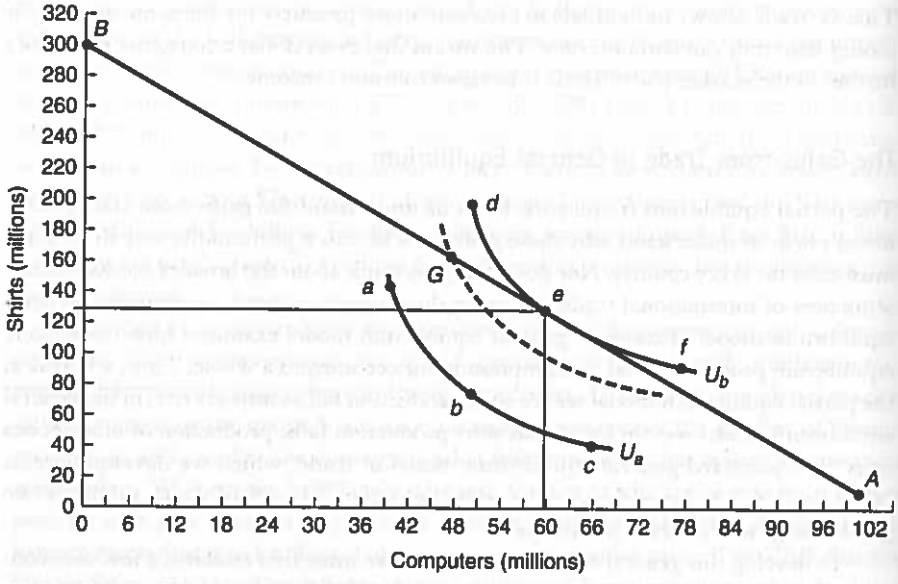


Figure 3.2 U.S. Production Possibility Frontier.

increase the amount of shirts produced by the same factor. Double the amount of labor and capital employed in shirt production and double the number of shirts produced. Alternatively, we could assume that the United States faces *increasing* opportunity costs and connect points *A* and *B* with a curved line that bends in toward the origin. The shift from producing 49,999,999 computers to 50 million computers costs 3 shirts. Yet, when the United States moves from producing 89,999,999 to 90 million computers, it costs 7 shirts. Thus, the opportunity cost of producing each good rises as the United States dedicates a larger share of its factors to the production of a single good. If we assume the United States faces increasing opportunity costs, we are also implicitly assuming that factors yield diminishing marginal returns. This means that the number of additional computers the United States can produce for each additional worker employed in computer production will fall as the number of workers employed in computer production rises. Most contemporary models assume that factors yield diminishing marginal returns. To keep things simple, we will assume constant marginal returns.

Our second core concept, consumption indifference curves, helps us understand what specific combination of computers and shirts American consumers will purchase. Consumers will acquire shirts and computers in the combination that maximizes their collective utility. Economists conceptualize consumer utility with indifference curves. We assume that consumers prefer more to less, and therefore consumer utility increases as we move away from the origin. Some combinations of shirts and computers, such as those at points *a*, *b*, and *c* on Figure 3.2, yield the same amount of utility. If asked to choose between these three, our consumer will say, "I like them all the same." If we connect every combination of shirts and computers that provides our consumer with the same amount of utility with a curved line such as U_a, we have drawn an indifference

curve. Our consumer enjoys identical utility from every combination of shirts and computers that falls on U_a. We can draw a second indifference curve that links the combinations *d*, *e*, and *f*. Each of these combinations yield more utility than *a*, *b*, or *c*, and are thus said to lie on a higher indifference curve. But, our consumer is indifferent between *d*, *e*, and *f*. We can connect these three combinations with a second indifference curve, U_b. Were we to repeat this exercise for every possible combination of shirts and consumers within this two-dimensional space, we would have a complete indifference map.

Three additional characteristics of indifference curves are important. First, indifference curves typically slope downwards. This slope, called the marginal rate of substitution, tells us how much of one good the consumer is willing to give up to acquire an additional unit of the second good. Second, indifference curves typically bend in toward the origin. This reflects the assumption of diminishing marginal utility. The first computer provides a large improvement in utility. Each successive computer, however, provides a smaller increase of utility. Consequently, even though the consumer might be willing to give up a large number of shirts to acquire her first computer, she will be willing to give up fewer shirts to acquire her sixth computer. Finally, when we focus on production and consumption for an entire country, we construct community indifference curves rather than individual indifference curves. Community indifference curves aggregate utility for all consumers in that society. In this example, then, our community indifference curves embody the aggregated preferences of all American consumers.

Together, the PPL and indifference curves allow us to define equilibrium production and consumption of shirts and computers in this autarkic American economy. Production and consumption will occur at the point where the marginal rate of transformation (the slope of the PPF) is equal to the marginal rate of substitution (the slope of the indifference curve). Stated differently, production and consumption will occur where the PPF and the indifference curve are tangent. This is point *e* on Figure 3.2.

Why must production and consumption occur only at this point? Suppose the United States initially produced and consumed at *G*. Society can gain greater utility than at *G* (consumers can shift to a higher indifference curve) by consuming fewer shirts and more computers. We would therefore expect consumers to demand fewer shirts and more computers and we would expect production to shift in response, producing more computers and fewer shirts. Beyond *e*, consuming additional computers and fewer shirts decreases consumer utility. Consequently, consumers will begin to demand more shirts and fewer computers. Only at *e* is it impossible to achieve higher utility from a different combination of shirts and computers. Consumer utility is thus maximized by producing and consuming at *e*. Under autarky, therefore, equilibrium production and consumption in the United States equals 60 million computers and 120 million shirts.

To see how trade changes this equilibrium, we must introduce a country for the United States to trade with. We will assume that the only other country in the world is China. We construct China's PPF just as we did for the United States (see Figure 3.3). Let's suppose that if China dedicates all of its labor and capital to computers, it can produce 20 million computers. If it dedicates all of its labor and capital to shirt production, it can produce 400 million shirts. Connecting these two points yields China's PPF. Given our assumptions, China's marginal rate of transformation is 20: Every computer China produces carries opportunity costs of 20 shirts. We then find the point of

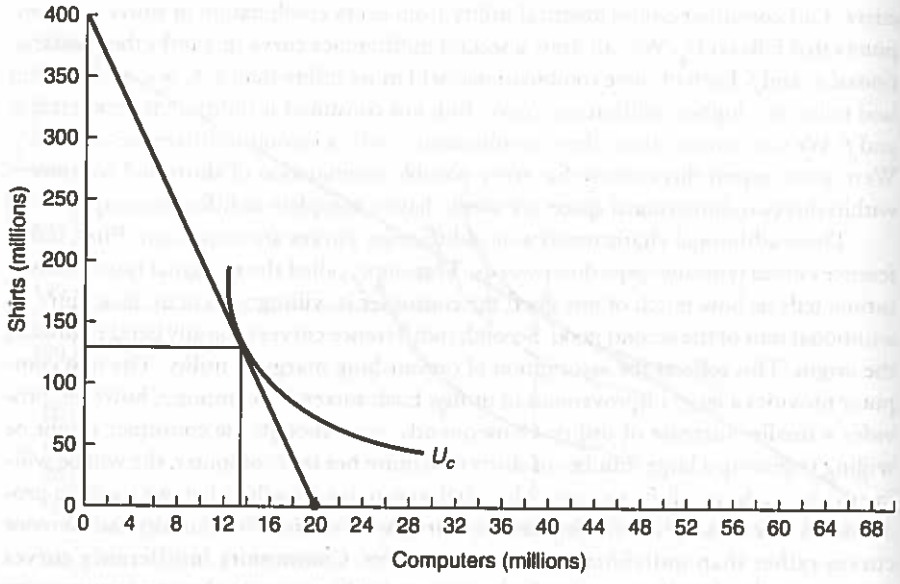


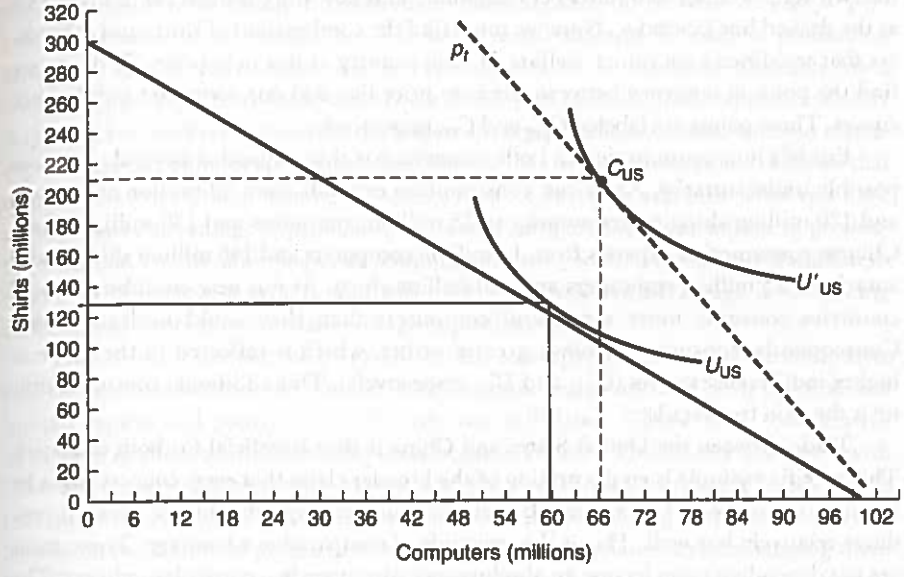
Figure 3.3 China's Production Possibility Frontier.

tangency between China's consumer indifference curves and the PPF to identify equilibrium production and consumption in an autarkic China. Based on our assumptions, equilibrium production and consumption in autarkic China yields 13 million computers and 140 million shirts under autarky.

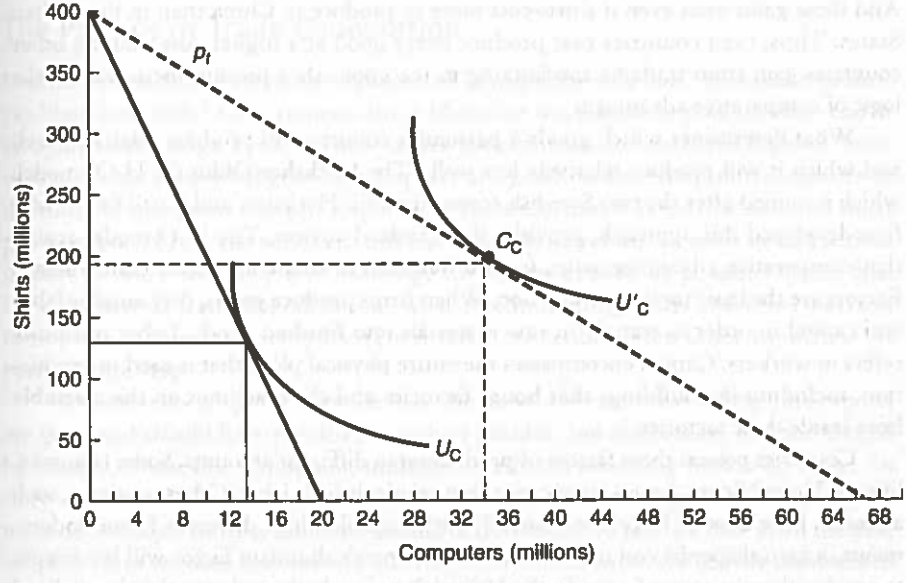
We can now see how trade between the United States and China affects equilibrium production and consumption in both countries (see Figure 3.4). Trade changes equilibrium production by causing each country to specialize in the production of one good. The United States specializes in computer production and stops producing shirts. China specializes in shirt production and stops producing computers. Specialization arises from the conclusions each draws from a simple price comparison. The United States acquires more shirts per computer when it buys them from China than when it produces them at home. A computer buys 20 shirts in China whereas at home a computer buys only 3 shirts. Why should the United States produce shirts at home when it can acquire them for substantially less in China? The United States thus stops producing shirts, produces only computers, and acquires the shirts it wants from China.

Similarly, China, acquires more shirts per computer when it buys them from the United States than when it produces them at home. China can acquire a computer from the United States for only 3 shirts whereas if it produces computers at home each computer costs 20. Why should China produce computers when it can acquire them much less expensively from the United States? China therefore stops producing computers, specializes in shirts, and acquires the computers it wants through trade with the United States. Trade thus changes equilibrium production in both countries: the United States specializes in computer production and China specializes in shirt production.

To see how trade affects equilibrium consumption in both countries, we need to know the price at which the United States and China will exchange shirts for



United States



China

Figure 3.4 Equilibrium with Free Trade and Complete Specialization.

computers. We know that this price must fall somewhere between 3 and 20 shirts per computer. We could solve for the exact price that will arise, but we'll simply assume that the two agree to trade at 6 shirts per computer. This new price is depicted in Figure 3.4 as the dashed line labeled p_t. Now we must find the combination of shirts and computers that maximizes consumer welfare in each country at this new price. To do so, we find the point of tangency between the new price line and our consumer indifference curves. These points are labeled C_{US} and C_C, respectively.

Equilibrium consumption in both countries has thus expanded beyond what was possible under autarky. American consumption expands from 60 million computers and 120 million shirts under autarky to 75 million computers and 150 million shirts. Chinese consumption expands from 13 million computers and 140 million shirts under autarky to 25 million computers and 250 million shirts. At this new equilibrium, both countries consume more shirts and computers than they could under autarky. Consequently, consumers achieve greater utility, which is reflected in the move to higher indifference curves (U'_{US} and U'_C, respectively). This additional consumer utility is the gain from trade.

Trade between the United States and China is thus beneficial for both countries. This specific example is an illustration of the broader claim that *every* country gains by specializing in goods it produces relatively well and trading them for the goods it produces relatively less well. This is the principle of comparative advantage. These gains are not dependent upon having an absolute cost advantage in a particular industry. The United States does not gain because it produces computers more cheaply than China. It gains because it can acquire more shirts per computer in China than it can at home. And these gains exist even if shirts cost more to produce in China than in the United States. Thus, even countries that produce every good at a higher cost than all other countries gain from trade by specializing in the goods they produce best. This is the logic of comparative advantage.

What determines which goods a particular country will produce relatively well and which it will produce relatively less well? The **Hecksher-Ohlin** (or H-O) **model**, which is named after the two Swedish economists, Eli Hecksher and Bertil Ohlin who first developed this approach, provides the standard answer. The H-O model argues that comparative advantage arises from differences in countries' **factor endowments.** Factors are the basic tools of production. When firms produce goods, they employ labor and capital in order to transform raw materials into finished goods. Labor obviously refers to workers. Capital encompasses the entire physical plant that is used in production, including the buildings that house factories and the machines on the assembly lines inside these factories.

Countries possess these factors of production in different amounts. Some countries, like the United States, have a lot of capital but relatively little labor. Other countries, such as India, have a lot of labor but relatively little capital. These different factor endowments in turn shape the cost of production. A country's abundant factor will be cheaper to employ than its scarce factor. In the United States and other advanced industrialized countries, capital is relatively cheap and labor is relatively expensive. In India and other developing countries, labor is relatively cheap and capital is relatively expensive.

Because countries have different factor endowments and face different factor prices, countries will hold a comparative advantage in different goods. A country will have a comparative advantage in goods produced using a lot of their abundant factor and a comparative disadvantage in goods produced using a lot of their scarce factor. In the auto industry, for example, payments to labor account for between 25 and 30 percent of the total cost of production. The much larger share of the costs of production arise from capital expenditures, that is, expenditures on the machines, assembly lines, and buildings required to build cars (Dicken 1998). In contrast, in the apparel industry wages paid to workers account for the largest share of production costs, whereas capital expenditures account for a much smaller share of the costs of production. It follows that countries like the United States and Japan with a lot of capital and little labor will have a comparative advantage in producing cars and a comparative disadvantage in producing clothing. By the same logic, developing countries such as India and Bangladesh with a lot of labor and little capital will have a comparative advantage in producing clothing and a comparative disadvantage in producing cars.

Thus, in our example, the United States has a comparative advantage in computers and not in shirts because the United States is abundantly endowed with physical and human capital and poorly endowed with low-skill labor. China has a comparative advantage in shirts and not in computers because China is abundantly endowed with labor and poorly endowed with human and physical capital. Comparative advantage tells us, therefore, that all countries gain from trade by specializing in the goods that rely heavily on the factors of production that they hold in abundance and exchanging them for goods that rely heavily on the factors of production that are scarce in their economy.

The Politics of Trade Cooperation

If trade liberalization raises the standard of living, then why don't governments simply liberalize trade? Governments don't liberalize trade because politics intervene in two important ways. First, politics causes governments to invert the logic of trade theory. Trade theory suggests that imports are good because they allow societies to consume things more cheaply. Exports are the unfortunate price that societies must pay to import. From the perspective of trade theory, therefore, societies should seek to import as much as possible in exchange for as few exports as possible. Given this logic, unilateral trade liberalization—that is, eliminating tariffs and other barriers to imports without receiving reciprocal tariff reductions from other countries—is perfectly sensible.

Governments adopt the opposite logic, however. Governments believe that exports are good and should be expanded as much as possible, but imports are bad and should be limited. From this standpoint, unilateral trade liberalization makes no sense. To fully understand why politics causes governments to invert the logic of trade theory, we must delve deeply into the domestic politics of trade policy, a task we take up in the next chapter. Here we note only that the interests of domestic firms are heavily represented in domestic trade politics, but the interests of consumers are often overlooked. As a result, governments care little about consumer gains and care a lot about trade's impact on domestic industries.

Not all domestic industries gain from trade liberalization. Firms in comparatively advantaged industries do gain, but those in comparatively disadvantaged industries lose.

As a general rule, therefore, governments strive to open foreign markets so that their competitive industries can increase their exports while continuing to protect their less competitive industries from imports. In this political world, trade liberalization becomes possible only through international agreements that provide reciprocal tariff reductions.

As a direct consequence, reciprocal agreements have become the standard approach to trade liberalization. The ability of governments to conclude trade agreements is frustrated, however, by the second intervention of politics: the enforcement problem. The **enforcement problem** refers to the fact that governments cannot be certain that other governments will comply with the trade agreements that they conclude (Keohane 1984; Conybeare 1984; Oye 1986). As a result, governments will be reluctant to enter into trade agreements, even when they recognize that they would benefit from doing so. Even though this might seem counterintuitive, we can use a simple game theory model, called the prisoners' dilemma, to see how the enforcement problem can frustrate the efforts of governments to conclude mutually beneficial trade agreements.

Suppose that China and the United States protect their comparatively disadvantaged industries with high tariffs, thereby blocking all trade between them in shirts and computers. Suppose also that the Chinese and American governments both know each would benefit from a reciprocal agreement that eliminated these tariffs. Would they be able to conclude the agreement? The prisoners' dilemma tells us that they will be unable to do so.

In the prisoners' dilemma, China and the United States each have two strategy choices: Each can open its market to the other's exports, which we will call *liberalize*, or each can use tariffs to keep the other's products out of its domestic market, which we will call *protect*. Two governments with two strategy choices each generates the two-by-two matrix depicted in Figure 3.5.

Each cell in this matrix corresponds to a strategy combination, and these strategy combinations produce outcomes. We can describe these outcomes starting in the top left cell and moving clockwise. One word about the notation we use before we proceed. It is conventional to list the strategy choice of the row player (the player who selects its strategy from the rows of the matrix) first and the strategy choice of the column player (the player who selects its strategy from the columns of the matrix) second. Thus, the

		United States	
		Liberalize	Protect
China	Liberalize	*L,L* *I*	*L,P* *II*
	Protect	*P,L* *IV*	*P,P* *III*

Preference Orders:
China: *P,L* > *L,L* > *P,P* > *L,P*
United States: *L,P* > *L,L* > *P,P* > *P,L*

Figure 3.5 The Prisoners' Dilemma and Trade Liberalization.

strategy combination referred to as "*liberalize/protect*" means that the row player, which in this case is China, has played the strategy *liberalize* and the column player, which is the United States, has played the strategy *protect*.

We can now describe the four outcomes.

- *Liberalize/Liberalize:* Both eliminate tariffs. China exports shirts to the United States, and the United States exports computers to China.
- *Liberalize/Protect:* China eliminates tariffs, but the United States does not. The United States exports computers to China, but China cannot export shirts to the United States.
- *Protect/Protect:* Both retain their tariffs. No trade takes place.
- *Protect/Liberalize:* The United States eliminates tariffs, and China does not. China exports shirts to the United States, but the United States cannot export computers to China.

Now we must determine how each government ranks these four outcomes. How much utility do they realize from each outcome? China ranks them in the following order:

protect/liberalize* > *liberalize/liberalize* > *protect/protect* > *liberalize/protect

where the "greater than" sign means "is preferred to." It is not hard to justify this ranking.

- China gains the most utility from *protect/liberalize*. Here China exports shirts to the United States and protects its computer producers from American competition.
- China gains less utility from *liberalize/liberalize* than from *protect/liberalize*. Here China can export to the United States, but must open its market to American imports.
- China gains less utility from *protect/protect* than from *liberalize/liberalize*. Here China protects its domestic market, but cannot export to the United States.
- China gains less utility from *liberalize/protect* than from *protect/protect*. Here China opens its market to the United States but does not get access to the American market.

In other words, China's most preferred outcome is unreciprocated access to the U.S. market. Its second-best outcome is reciprocal tariff reductions, which is in turn better than reciprocal protection. China's worst outcome is a unilateral tariff reduction.

The prisoners' dilemma is a symmetric game. This means that the United States faces the exact same situation as China. Consequently, the United States' payoff order is identical to China's payoff order. The only difference arises from the notation we use. Like China, the United States' most preferred outcome is unreciprocated access to the other's market, but for the United States this is the outcome *liberalize/protect*. Also like China, the United States' least preferred outcome is granting the other unreciprocated access to its market, which for the United States is the outcome *protect/liberalize*. Thus, the United States' payoff order is identical to the Chinese payoff order, but the position of the most and least preferred outcomes are reversed:

liberalize/protect* > *liberalize/liberalize* > *protect/protect* > *protect/liberalize

We can now see how China and the United States will play this game and what outcome will result. China and the United States both have a dominant strategy—a single strategy that always returns a higher payoff than all other strategy choices. *Protect* is this dominant strategy. *Protect* dominates *liberalize* as a strategy choice because each government will always realize higher utility by playing *protect* than by playing *liberalize*.

We can see why *protect* is a dominant strategy by working through China's best responses to American strategy choices. Suppose the United States plays the strategy *liberalize*. If China plays *liberalize* in response, China receives its second most preferred outcome (*liberalize/liberalize*). If China plays *protect* in response, China receives its most preferred outcome (*protect/liberalize*). Thus, if the United States plays *liberalize*, China's best response—the strategy that returns the highest utility—is *protect*.

Now suppose the United States plays *protect*. If China responds with *liberalize*, it receives its least preferred outcome (*liberalize/protect*). If China responds with *protect*, however, it receives its second least preferred outcome (*protect/protect*). Thus, if the United States plays *protect*, China's best response is to play *protect*.

Protect, therefore, "dominates" *liberalize* as a strategy choice—that is, *protect* yields more utility for China than *liberalize* regardless of the strategy that the United States plays. Because the prisoners' dilemma is symmetric, *protect* is also the United States' dominant strategy. Because both governments have dominant strategies to play *protect*, the game always yields the same outcome: China and the United States both play *protect* and the game ends at the *protect/protect* outcome. Both countries retain tariffs.

This outcome has two important characteristics. First, it is **Pareto suboptimal.** Pareto optimality is a way to conceptualize social welfare. An outcome is Pareto optimal when no single actor can be made better off without at the same time making another actor worse off. Pareto suboptimal refers to outcomes in which it is possible for at least one actor to improve its position without any other actor being made worse off. In the prisoners' dilemma the *protect/protect* outcome is Pareto suboptimal because both governments realize higher payoffs at *liberalize/liberalize* than at *protect/protect*. Thus, rational behavior on the part of each individual government, each playing its dominant strategy *protect*, produces a suboptimal collective outcome. China and the United States are both poorer than they would be if they liberalized trade.

Second, the *protect/protect* outcome is a **Nash equilibrium.** A Nash equilibrium is an outcome at which neither player has an incentive to change strategies unilaterally. If China changes its strategy from *protect* to *liberalize*, the outcome shifts to *liberalize/protect*, China's least preferred outcome. Thus, China has no incentive to change its strategy unilaterally. If the United States changes its strategy from *protect* to *liberalize*, the outcome moves to *protect/liberalize*, the United States' least preferred outcome. Thus, the United States has no incentive to change its strategy unilaterally either. Putting these two points together reveals the prisoners' dilemma's central conclusion: Even though China and the United States would both gain from reciprocal tariff reductions, neither has an incentive to reduce tariffs. More broadly, the prisoners' dilemma suggests that even when all countries would clearly benefit from trade liberalization, political dynamics trap governments in a protectionist world.

Governments are unable to conclude agreements that make them all better off because each fears getting the "sucker payoff." If China and the United States agree to

A CLOSER LOOK

DISTRIBUTIVE BARGAINING AND THE GENEVA MINI-MINISTERIAL

Doha Round negotiations collapsed (again) at the end of July, 2008. After reaching agreement on multiple issues during a "mini-Ministerial" in Geneva, India, China, and the United States failed to bridge their differences on a rather obscure special safeguard mechanism (SSM). The SSM would allow developing countries to raise tariffs (temporarily) to protect local farmers from import surges. India and China demanded SSM rules that would make it relatively easy to protect farmers, whereas the United States insisted on rules that made it more difficult to do so. Unable to find rules that satisfied both, trade ministers abandoned the negotiations. Major media outlets across the world pronounced the Doha Round dead, while some even speculated that the WTO itself was doomed.

Although it is easy to view the collapse as evidence that the Doha Round is in peril, one might also suggest, less obviously, that the collapse brings governments one step closer to agreement. To understand this apparent paradox we need to think a bit about bargaining and bargaining strategy. Although trade agreements offer gains to all governments, governments strive to get the best deal possible for themselves. The best deal for each government is the one that combines maximum concessions from other members in exchange for minimal concessions. Group of Twenty (G20) governments want large reductions in American and European agricultural protection in exchange for minimal liberalization of their manufacturing and service sectors. American and European governments seek the opposite—maximum G20 cuts in manufacturing and services in exchange for minimal cuts in farm tariffs and subsidies. In bargaining, therefore, governments are tussling over the distribution of the available joint gains, and the agreement best for a G20 government is necessarily less good for the United States and the European Union (EU).

Each government's ability to negotiate the best possible deal for itself is complicated by private information. G20 governments do not know how much American and European governments are willing to reduce farm tariffs and subsidies. Nor do they know how much they must offer in exchange for such liberalization. Each government holds these critical pieces of information about its negotiating position privately, and has no incentive to reveal them to others. If American negotiators tell the G20 the maximum cuts in farm tariffs and subsidies the United States will make, then G20 governments will accept nothing less. If the United States tells G20 governments the minimal amount of service and NAMA liberalization it expects, G20 governments will offer only this minimal amount. Revealing private information about their negotiating positions thus condemns governments to their worst possible deal—minimal gains and maximal concessions.

Negotiating the best deal possible thus requires governments to force each other to reveal information they do not wish to reveal. This is exactly the situation

(continued)

governments faced in Geneva in July, 2008. Trade ministers had negotiated for nine days. By Tuesday, they had reached the point at which each government had to decide whether the resulting package was the best deal it could get. China and India had to decide whether the United States and the EU had made their maximum concessions. Yet, they knew that asking for additional concessions was pointless—they had been asking for nine days, and asking for more now would simply elicit a quick "no, this is my best offer." China and India could learn if, in fact, the offer on the table was the best offer only by walking away from the negotiations.

Walking away from the table served a strategic purpose. Walking away constituted a "costly signal": it transformed cheap talk (can we have additional concessions) into costly action (we'll forgo this agreement to get additional concessions). This costly action makes American policymakers more likely to believe that additional concessions are necessary to get a deal. Walking away also imposes costs on the United States by denying it an agreement it wants. By walking away, therefore, India and China are trying to gain information about the U.S. bargaining position. If the United States offers additional concessions, India and China get a better deal and their gamble has paid off. But even if the United States fails to offer additional concessions, China and India still gain valuable information that the United States has offered all that it will offer. They can then accept the deal on the table.

The collapse of negotiations thus might bring governments one step closer to agreement by revealing information about each government's negotiating position. The better information enables governments to believe they have achieved the best deal possible. Of course, the collapse might also indicate that the Doha Round is dead. The problem, of course, is that we cannot know which of these is correct. To know which is correct we need private information about government negotiating positions that we cannot get. Thus, although we cannot know whether the collapse does, in fact, bring governments closer to agreement, we should not be surprised if governments conclude a deal not fundamentally different than the one India and China walked away from in July of 2008.

liberalize trade and then China complies with this agreement but the United States does not, the United States has exploited China. China suffers the "costs" of rising imports without getting the "benefit" of increased exports. The gains from trade liberalization could be achieved, of course, if governments could enforce international trade agreements. Governments could agree in advance to play *liberalize* strategies if they were confident that cheating would be caught and punished. Moreover, because cheating would be punished, both would comply with the agreement. The international system provides no enforcement mechanism, however. Domestic political systems rely upon the police and the judicial system to enforce laws, but the international system does not have an authoritative and effective judicial system. Instead, the international system is anarchic; that is, it is a political system without an overarching political authority capable of enforcing the rules of the game.

The World Trade Organization and Trade Cooperation

We now can consider the role the WTO plays in the world trade system. Trade theory tells us that trade is mutually beneficial. The logic of the prisoners' dilemma suggests, however, that governments cannot capture these gains because they are unable to enforce the required trade agreements. To capture these gains, governments must devise some mechanism that provides the assurances that cooperation by one will be met with cooperation by others. The WTO helps provide these assurances and in doing so enables governments to liberalize trade and capture the available welfare gains. To understand how the WTO fulfills this role, we must first examine the conditions under which cooperation can emerge in a prisoners' dilemma. Then we can examine how the WTO helps create these conditions.

Although the prisoners' dilemma is pessimistic about the prospect for international trade cooperation, cooperation in a prisoners' dilemma is not impossible. Cooperation can emerge if three specific conditions are met. First, cooperation can emerge in an iterated prisoners' dilemma, that is, in a game played repeatedly by the same governments (see Taylor 1976; Axelrod 1984; Keohane 1984; Oye 1986). Iteration changes the nature of the reward structure that governments face. In a one-shot play of the prisoners' dilemma, countries make a one-time choice and receive a one-time payoff. In an iterated game, however, governments make repeated choices and receive a stream of payoffs over time. Assuming that the two other necessary conditions are met, governments will prefer the stream of payments they receive from cooperating over time to the payoff they receive from cheating on an agreement. Iterating the game can therefore make it rational for a government to play the *liberalize* strategy.

Second, governments must use reciprocity strategies to enforce the *liberalize/liberalize* outcome. Although many **reciprocity** strategies exist, the most well known is called **tit-for-tat** (Axelrod 1984). In tit-for-tat, each government plays the strategy that its partner played in the previous round of the game. Trade liberalization by one government in one round of play is met by trade liberalization from the other government in the next round. Should one government play *protect* in one round (that is, cheat on an existing trade agreement), the other government must play *protect* in the next round of play. Playing such tit-for-tat strategies allows governments to reward each other for cooperation and punish each other for cheating.

Finally, governments must care about the payoffs they will receive in future rounds of the game. If governments fully discount future payoffs, the iterated game essentially reverts back to a single play of the prisoners' dilemma; when it does, the threat of punishment in the next round of play can hardly be expected to promote cooperation in this round. But if governments care about the future and if they use a reciprocity strategy such as tit-for-tat, then cooperation in an iterated prisoners' dilemma becomes rational; each government can realize a larger stream of payoffs by cooperating than it can realize by defecting.

The WTO provides the first two of these three necessary conditions. The WTO helps iterate the game by creating expectations of repeated interaction. Membership in the WTO has been relatively stable. The number of countries that belong to the WTO has increased over time, and very few countries have left the organization after joining. As a consequence, WTO members know that the governments with which they negotiate today will be the governments with which they negotiate tomorrow, next year, and on into the future. In addition, WTO members interact regularly within the organization.

Governments have already concluded eight formal bargaining rounds and are now engaged in the ninth such round. In addition to these formal rounds of negotiations, the WTO draws governments together for annual and semiannual reviews of national trade policies. By bringing the same set of governments together in a regularized pattern of interaction, the WTO iterates intergovernmental trade interactions.

The WTO also provides the information that governments need in order to use reciprocity strategies. In order to use a tit-for-tat strategy effectively, governments must know when their partners are complying with trade agreements and when they are cheating. The WTO makes this easier by collecting and disseminating information on its members' trade policies. Moreover, WTO rules provide clear standards against which governments' trade policies can be evaluated. The WTO's most-favored nation clause, for example, prohibits discriminatory practices except under a set of well-defined exceptions. To give another example, the WTO's rules governing domestic safeguards define the conditions that must be met in order for governments to temporarily opt out of commitments. These detailed rules increase transparency. Transparency means that it is easier for governments to determine whether a specific trade measure adopted by a particular government is or is not consistent with WTO rules. The high-quality information and the transparency provided by the WTO allow governments to monitor the behavior of other WTO members. This in turn makes it easier for governments to use reciprocity strategies to enforce trade agreements.

The ability of governments to use the WTO to enforce trade agreements is most clearly evident in the WTO's **dispute settlement mechanism.** The dispute settlement mechanism follows a standard procedure that was agreed to by all members of the WTO during the Uruguay Round. (See Figure 3.6.) A dispute is initiated when a government brings an alleged violation of WTO rules to the WTO Dispute Settlement Body (DSB, consisting of all WTO members). The DSB initially encourages the governments involved in the dispute to try to resolve the conflict through direct consultations. If such consultations are unsuccessful, the DSB creates a formal panel to investigate the complaint.

This panel is typically composed of three experts in trade law who are selected by the DSB in consultation with the governments involved in the dispute. The panel reviews the evidence in the case, meets with the parties to the dispute and outside experts if necessary, and prepares a final report that it submits to the DSB. The DSB must accept the panel's final report unless all WTO members, including the government that initially brought the complaint, vote against its adoption.

Both governments can appeal the panel's decision. If an appeal is requested, the DSB creates an appellate body composed of three to five people drawn from a list of seven permanent members. The appellate body can uphold, reverse, or modify the panel's findings, conclusions, and recommendations. The appellate report is given to the DSB for approval, and as with the panel report, the DSB can reject the report only with the consent of all member governments. If at the end of this process it is determined that the disputed trade measure is inconsistent with WTO rules, the government must alter its policy to conform to the rule in question or compensate the injured parties. The entire dispute settlement process, from initiation to appellate report, is supposed to take no longer than 15 months.

A recent case involving the European Union's banana import regime illustrates this dispute-settlement mechanism in operation and highlights how governments use

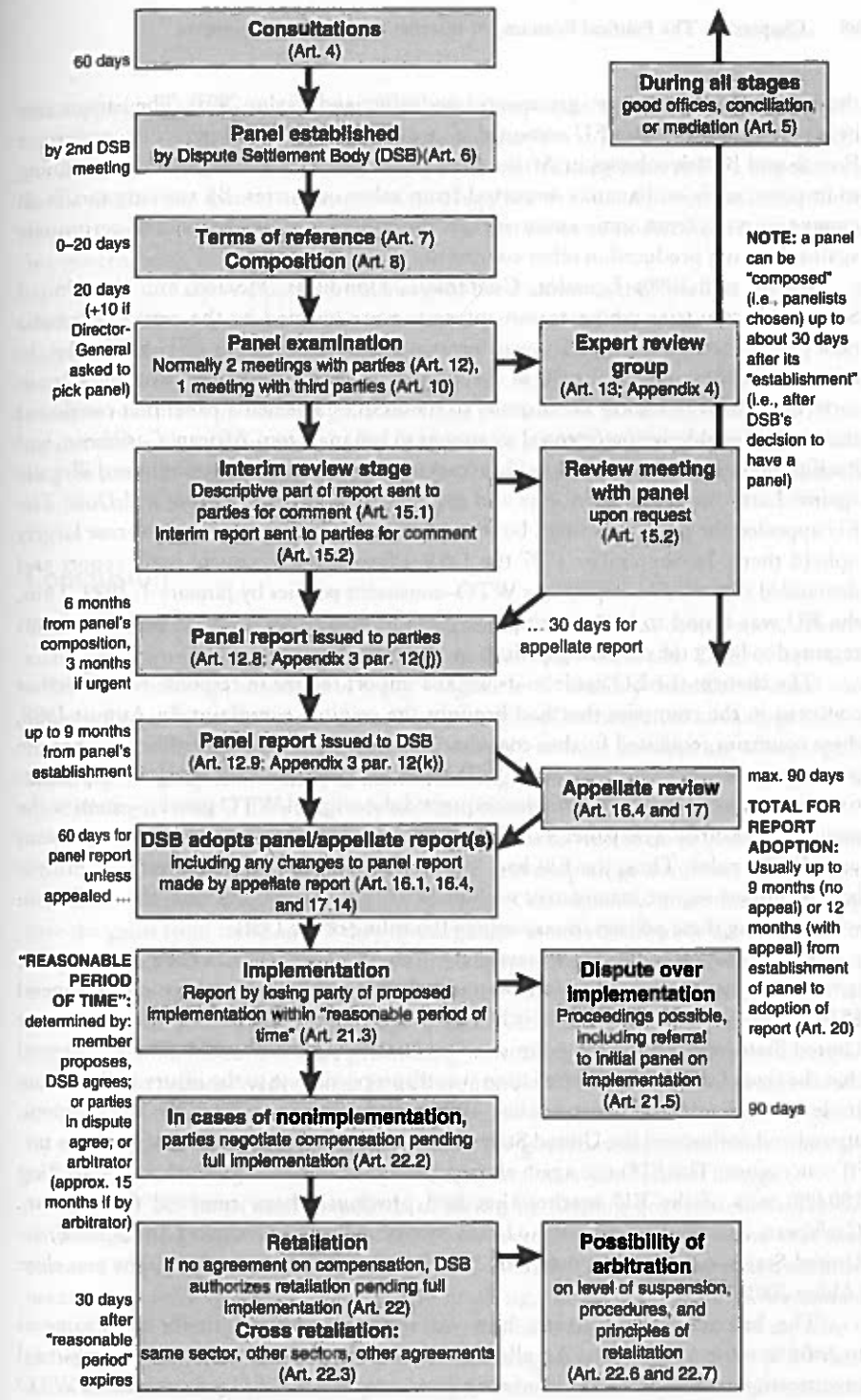


Figure 3.6 The Dispute Settlement Mechanism.
Source: World Trade Organization, The panel process. Reproduced with the permission of the World Trade Organization.

ıe system to enforce trade agreements (see Josling and Taylor 2003). The banana case egan in 1993 when the EU removed all tariffs on bananas imported from former rench and British colonies in Africa, the Pacific, and the Caribbean while continuing) impose tariffs on bananas imported from other countries. By waiving tariffs on anana imports from some countries but not others, the EU began to discriminate gainst bananas produced in other countries.

In the mid-1990s Ecuador, Guatemala, Honduras, Mexico, and the United tates—all countries whose export interests were harmed by the new EU banana olicy—claimed that this policy was inconsistent with a number of GATT rules. In ther words, they accused the EU of cheating on its WTO obligations. Consultations in ırly 1996 failed to resolve the dispute, so the DSB established a panel that concluded ıat the EU could give preferential treatment to bananas from African, Caribbean, and acific countries, but that the specific arrangements it had used discriminated illegally gainst Latin American producers and the American firms, Chiquita and Dole. The .U appealed the panel's findings, but the appellate body that reviewed the case largely pheld them. In September 1997 the DSB adopted the appellate body report and emanded that the EU implement WTO–consistent policies by January 1, 1999. Thus, ıe EU was found to be "cheating" on a trade agreement it had entered, and was :quired to bring the offending policies in line with these obligations.

The changes the EU made to its banana import regime in response raised further ɔncerns in the countries that had brought the original complaint. In August 1998, ıese countries requested further consultations with the EU to determine whether the ew measures were consistent with WTO rules. Consultations were again unproduc- ve, and in December 1998, Ecuador requested the original WTO panel to examine the ew EU measures. The panel found that the new measures were not fully consistent 'ith WTO rules. Thus, the EU had "cheated" in the first place by implementing a anana import regime inconsistent with its WTO obligations, and had "cheated" again 'hen altering these policies in response to the ruling of the DSB.

Recognizing that the EU was unlikely to comply with its WTO obligations unless was costly not to do so, the United States asked the WTO for permission to suspend 520 million in tariff concessions it had previously granted to the EU. In essence, the Inited States was asking for permission to retaliate against the EU. The EU argued ıat the size of the proposed retaliation was disproportionate to the injury to American 'ade caused by the EU banana policy. WTO arbitration, initiated at the EU's request, greed and authorized the United States to suspend only $191.4 million of previous tar- T concessions. The EU once again altered its banana import regime, this time shifting 00,000 tons of the EU market that had previously been reserved for African, 'aribbean, and Pacific producers to Latin American banana producers. In response, the Inited States suspended its sanctions and the banana dispute was brought to a close Alden 2001, 14).

The banana case illustrates how governments can use tit-for-tat strategies) enforce trade agreements. An alleged defection by the EU prompted an impartial ıvestigation by the WTO. This investigation indicated that EU policy violated WTO ıles, and when the EU failed to bring its policies into line with its obligations, the Inited States retaliated by withdrawing concessions it had made previously to the EU.) the language of the iterated prisoners' dilemma, the EU defected and the United

States, playing a tit-for-tat strategy, defected in response. Moreover, American retaliation ca ne only after the WTO had determined that it was justified and the scale of the retaliation was proportionate to the injury suffered. Although the WTO's dispute resolution mechanism focuses our attention on a legalistic version of tit-for-tat, it also allows us to see in a very detailed way how the WTO can promote trade cooperation by helping governments enforce trade agreements.

The WTO thus helps governments gain the assurances they need in order to conclude the trade agreements required to capture the gains from trade. The WTO provides this assurance by allowing governments to monitor the behavior of their trade partners and to enforce the trade agreements they reach. By doing so, the WTO enables societies to capture the welfare gains the trade provides. In the absence of the WTO, or an institution that performed similar functions, it is unlikely that governments would be able to reach the agreements required to liberalize trade. Each society, and thus the world as a whole, would be poorer as a result.

Conclusion

The WTO exists, therefore, because it facilitates international cooperation, thereby enabling societies to capture the welfare gains available from trade. Trade raises social welfare by enabling consumers to enjoy a higher level of utility than if they could consume only goods produced at home. The principle of comparative advantage tells us that these welfare gains do not require a country to have an absolute advantage in anything. As long as a country is better at doing some things than others, it gains by specializing in what it does relatively well and trading for everything else.

Politics, however, makes it difficult for societies to realize these gains from trade. For reasons we examine in greater detail in the next chapter, governments often neglect consumer interests in favor of producer interests. Consequently, governments can capture the gains from trade only if they can negotiate international trade agreements. Yet, cooperation is often very difficult. Governments must believe that cooperation on their part will be reciprocated by cooperation from their partners. They must believe that their partners will not try to take advantage of them. And as the prisoners' dilemma highlights, unless such assurances are provided, governments have little incentive to cooperate. The international trade system lacks the equivalent of a state to enforce agreements, and thus governments face a pervasive enforcement problem when they try to cooperate for mutual gain. Consequently, it is difficult for governments to conclude mutually beneficial agreements, and as a result, societies have lower standards of living.

The WTO helps raise standards of living by helping governments solve this enforcement problem. By enabling governments to feel reasonably secure that their partners will comply with the agreements they enter, the WTO provides the assurances necessary to achieve cooperation. Strictly speaking, the WTO is not an international equivalent of a state, because the WTO does not have the authority or the capacity to punish governments that fail to comply with trade agreements. Instead, the WTO facilitates international cooperation by providing an infrastructure that allows governments to enforce agreements themselves. By providing a set of mutually agreed on rules, by helping governments monitor the extent to which their partners comply with these rules, and by providing a dispute-settlement mechanism that helps governments resolve

:hose issues of compliance that do arise, the WTO enables governments to enforce :ffectively the trade agreements that they reach. The WTO thus provides enough ıssurance that all governments will live up to the agreements that they enter into and :hat no government will be able to take advantage of the others. By providing this infra-ıtructure, the WTO enables governments to conclude the trade agreements necessary :o capture the welfare gains from trade.

Key Terms

Dispute Settlement Mechanism
Enforcement Problem
Factor Endowments
Heckscher-Ohlin Model
Nash Equilibrium
Pareto Suboptimal
Reciprocity
Tit-for-Tat
Voluntary Export Restraints

Web Links

f you want more help with comparative advantage and gains from trade, visit the website maintained by Douglas Ruby. It provides an in-depth discussion of trade theory and an interactive module that allows you to see how different parameters alter the gains from trade. Visit this site at *www.digitaleconomist.com/ca_4010.html*.

The WTO website remains the best source for detailed information about how this organization operates: *www.WTO.org*. You might find particularly useful the information on the system's dispute-settlement mechanism, available at *www.wto.org/english/tratop_e/dispu_e/dispu_e.htm*.

Suggestions for Further Reading

For an approach that emphasizes the intuition of the theory of comparative advantage and lownplays explicit theory, see Russell D. Roberts, *The Choice: A Fable of Free Trade and 'rotectionism* (Upper Saddle River, NJ: Prentice Hall, 1994). For an excellent account of the istorical development of the theory of comparative advantage and of those theories that have hallenged the central claim of this theory, see Douglas Irwin, *Against the Tide: An Intellectual Iistory of Free Trade* (Princeton, NJ: Princeton University Press, 1996).

To delve more deeply into the logic of international cooperation and the role international nstitutions play in facilitating such cooperation, see Robert O. Keohane, *After Hegemony: 'ooperation and Discord in the Global Economy* (Princeton, NJ: Princeton University Press, 1984) nd Robert Axelrod, *The Evolution of Cooperation* (New York: Basic Books, 1984).

CHAPTER 4
A Society-Centered Approach to Trade Politics

Our focus on the international politics of trade in the last two chapters ignored an important question—what determines the specific trade objectives that governments pursue when bargaining within the WTO, when negotiating regional trade arrangements, or when making unilateral trade-policy decisions? We take up this question in this chapter and the next by examining two approaches to trade politics rooted in domestic politics. This chapter examines a society-centered approach to trade politics. A society-centered approach argues that a government's trade policy objectives are shaped by politicians' responses to interest groups' demands. The European Union's (EU) reluctance to liberalize European agriculture reflects EU policymakers' responses to the demands of European farmers. The Japanese government's commitment to high tariffs on imported rice reflects the Japanese government's need to respond to the demands of Japanese rice growers. The American effort to open foreign markets to American high technology and service exports while continuing to protect the American textile, apparel, and steel industries reflects the influence that industry-based interest groups exert on American trade policy.

To understand the political dynamics of this competition, the society-centered approach emphasizes the interplay between organized societal interests and political institutions. The approach is based on the recognition that trade has distributional consequences. In my home state, people employed in the textile and apparel industry—traditionally a large employer in North Carolina—have been hit hard by trade liberalization. Between 2000 and 2004, 207 textile and apparel factories closed, and about 44,000 people lost their jobs. In contrast, North Carolinians employed in the pharmaceutical industry or in finance have benefited from trade liberalization. The average wage earned by people employed in these industries rose in the first half of this decade, as did the total number of jobs available in these industries. In North Carolina, therefore, some people have gained from trade, whereas others have lost.

These distributional consequences generate political competition as the winners and losers from trade turn to the political arena to advance and defend their economic interests. The American Textile Manufacturers Institute and the National Council of Textile Organizations, business associations representing textile and apparel firms,