that at the initial price, the demand for the good exceeds domestic supply plus imports. This causes the price to be bid up until the market clears. In the end, an import quota will raise domestic prices by the same amount as a tariff that limits imports to the same level (except in the case of domestic monopoly, in which the quota raises prices more than this; see the appendix to this chapter).

The difference between a quota and a tariff is that with a quota, the government receives no revenue. When a quota instead of a tariff is used to restrict imports, the sum of money that would have appeared with a tariff as government revenue is collected by whoever receives the import licenses. License holders are thus able to buy imports and resell them at a higher price in the domestic market. The profits received by the holders of import licenses are known as **quota rents**. In assessing the costs and benefits of an import quota, it is crucial to determine who gets the rents. When the rights to sell in the domestic market are assigned to governments of exporting countries, as is often the case, the transfer of rents abroad makes the costs of a quota substantially higher than the equivalent tariff.

Case Study

An Import Quota in Practice: U.S. Sugar

The U.S. sugar problem is similar in its origins to the European agricultural problem: A domestic price guarantee by the federal government has led to U.S. prices above world market levels. Unlike the European Union, however, the domestic supply in the United States does not exceed domestic demand. Thus the United States has been able to keep domestic prices at the target level with an import quota on sugar.

A special feature of the import quota is that the rights to sell sugar in the United States are allocated to foreign governments, which then allocate these rights to their own residents. As a result, rents generated by the sugar quota accrue to foreigners. The quotas restrict the imports of both raw sugar (almost exclusively, sugar cane) as well as refined sugar. We now describe the most recent forecast for the effects of the import restrictions on raw sugar cane (the effects on the sugar refining industry are more complicated, as raw sugar is a key input of production for that industry).[3]

Figure 9-13 shows those forecasted effects for 2013. The quota would restrict imports to approximately 3 million tons; as a result, the price of raw sugar in the United States would be 35 percent above the price in the outside world. The figure is drawn with the assumption that the United States is "small" in the world market for raw sugar; that is, removing the quota would not have a significant effect on the world price. According to this estimate, free trade would increase sugar imports by 66 percent.

The welfare effects of the import quota are indicated by the areas a, b, c, and d. Consumers lose the surplus $a + b + c + d$, with a total value of $884 million. Part of this consumer loss represents a transfer to U.S. sugar producers, who gain the producer surplus a equal to $272 million. Part of the loss represents the production distortion b ($68 million) and the consumption distortion d ($91 million). The rents to the foreign governments that receive import rights are summarized by area c, equal to $453 million.

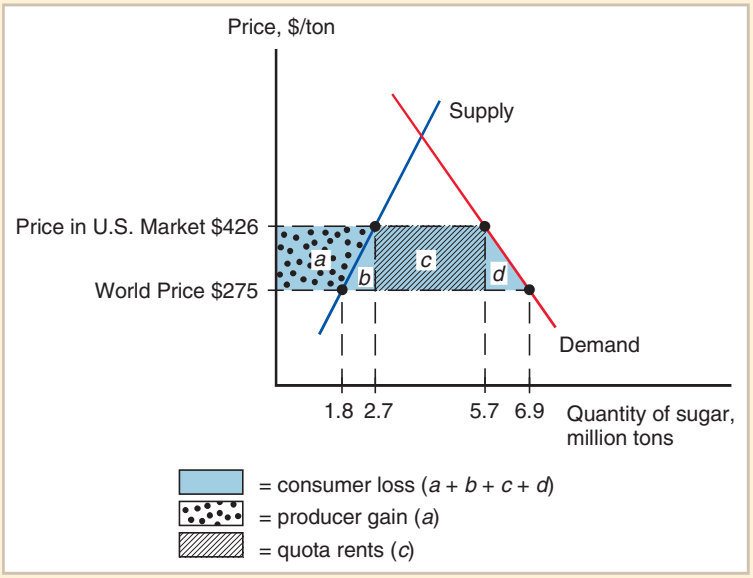
The net loss to the United States is equal to the distortions ($b + d$) plus the quota rents (c), a total of $612 million per year. Notice that much of this net loss comes from the fact that foreigners get the import rights.

[3] These estimates are based on a report by the U.S. International Trade Commission, *The Economic Effects of Significant U.S. Import Restraints.* (Washington, D.C., 2009) cited in Further Readings.

Figure 9-13

Effects of the U.S. Import Quota on Sugar

The quota limits imports of raw sugar to 3 million tons. Without the quota, imports of sugar would be 66 percent higher, or 5.1 million tons. The result of the quota is that the price of sugar is $426 per ton, versus the $275 price on world markets. This produces a gain for U.S. sugar producers, but a much larger loss for U.S. consumers. There is no offsetting gain in revenue because the quota rents are collected by foreign governments.



The sugar quota illustrates in an extreme way the tendency of protection to provide benefits to a small group of producers, each of whom receives a large benefit, at the expense of a large number of consumers, each of whom bears only a small cost. In this case, the yearly consumer loss amounts to only about $3 per capita, or a little more than $11 for a typical family. Not surprisingly, the average American voter is unaware that the sugar quota exists, and so there is little effective opposition.

From the point of view of the raw sugar producers (farmers and processors), however, the quota is a life-or-death issue. These producers employ only about 6,500 workers, so the producer gains from the quota represent an implicit subsidy of about $42,000 per employee. It should be no surprise that these sugar producers are very effectively mobilized in defense of their protection.

Opponents of protection often try to frame their criticism not in terms of consumer and producer surplus but in terms of the cost to consumers of every job "saved" by an import restriction. Clearly, the loss of the $42,000 subsidy per employee indirectly provided by the quota would force raw sugar producers to drastically reduce their employment. Without the quota, it is forecasted that 32 percent of the 6,500 jobs would be lost. This implies that the cost to the U.S. consumer is equal to $432,000 per job saved.

When one also considers that raw sugar is a key input of refined sugar (which is then used to produce a vast variety of confectionery consumer goods), the costs escalate even higher. In Chapter 4 we briefly mentioned these costs, which were roughly double the ones we have summarized here for raw sugar only. When one further considers that the high cost of sugar reduces employment in those sugar-using industries, the issue is no longer that the consumer cost per job saved is astronomically high; rather, it is plainly that jobs are being *lost*, not saved, by the sugar quota. The U.S. Department of Commerce has estimated that, for every farming/processing job saved by high sugar prices, three jobs are lost in the confectionery manufacturing industries.[4]

[4]See U.S Department of Commerce, International Trade Administration, *Employment Changes in U.S. Food Manufacturing: The Impact of Sugar Prices*, 2006.