TOPIC 4

INTERNATIONAL TRADE POLICY.

PART 1

IMPORT TARIFFS.

1. The free-trade argument

The free-trade argument is, in principle, persuasive убедительный. It states that if each nation produces what it does best and permits trade, over the long run all will enjoy lower prices and higher levels of output, income, and consumption than could be achieved in isolation.

In a dynamic world, comparative advantage is constantly changing owing to shifts in technologies, input productivities, and wages, as well as tastes and preferences. A free market compels adjustment to take place. требует корректировки

The efficiency of an industry must improve, or else resources will flow from low-productivity uses to those with high productivity.

Tariffs and other trade barriers are viewed as tools that prevent the economy from undergoing adjustment, resulting in economic stagnation.

Although the free-trade argument tends to dominate in the classroom, virtually all nations have imposed restrictions on the international flow of goods, services, and capital.

Proponents защитники of protectionism say that free trade is fine in theory, but that it does not apply in the real world.

2. A tariff, the simplest of trade policies, is a tax levied when a good is imported.

Specific tariffs are levied as a fixed charge for each unit of goods imported (for example, $3 per barrel of oil).

Ad valorem tariffs are taxes that are levied as a fraction of the value of the imported goods (for example, a 25 percent U.S. tariff on imported trucks).

In either case the effect of the tariff is to raise the cost of shipping goods to a country.

Tariffs are the oldest form of trade policy and have traditionally been used as a source of government income. Their true purpose, however, has usually been not only to provide revenue but to protect particular domestic sectors.

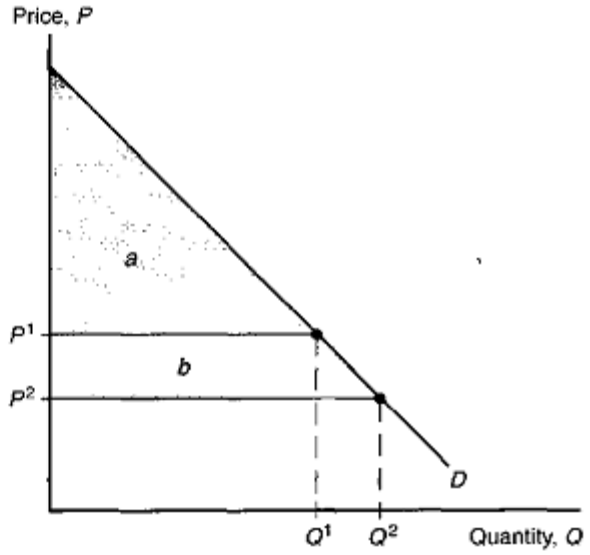
2.1 Costs and Benefits of a Tariff

A tariff raises the price of a good in the importing country and lowers it in the exporting country. As a result of these price changes, consumers lose in the importing country and gain in the exporting country. Producers gain in the importing country and lose in the exporting country. In addition, the government imposing the tariff gains revenue.

To compare these costs and benefits, it is necessary to quantify them. The method for measuring costs and benefits of a tariff depends on two concepts common to much microeconomic analysis; consumer and producer surplus.

Figure 8-7 | Geometry of Consumer Surplus

Consumer surplus is equal to the area under the demand curve and above the price.



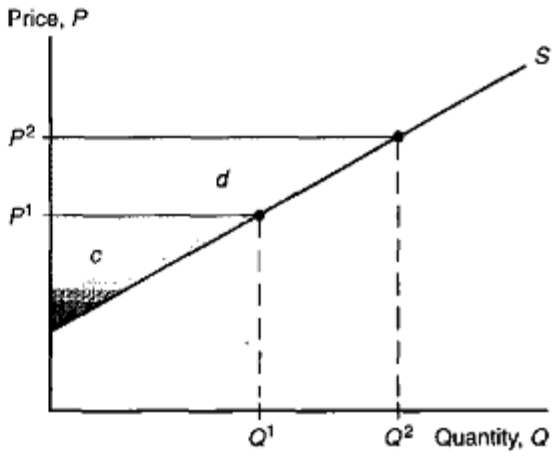
Consumer surplus measures the amount a consumer gains from a purchase by the difference between the price he actually pays and the price he would have been willing to pay. If, for example, a consumer would have been willing to pay $8 for a bushel of wheat but the price is only $3, the consumer surplus gained by the purchase is $5. Consumer surplus can be derived from the market demand curve.

If P is the price of a good and Q the quantity demanded at that price, then consumer surplus is calculated by subtracting P times Q from the area under the demand curve up to Q (Figure 1). If the price is P1, the quantity demanded is Q1 and the consumer surplus is measured by the area labeled a.

If the price falls to P2, the quantity demanded rises to Q2 and consumer surplus rises to equal a plus the additional area b.

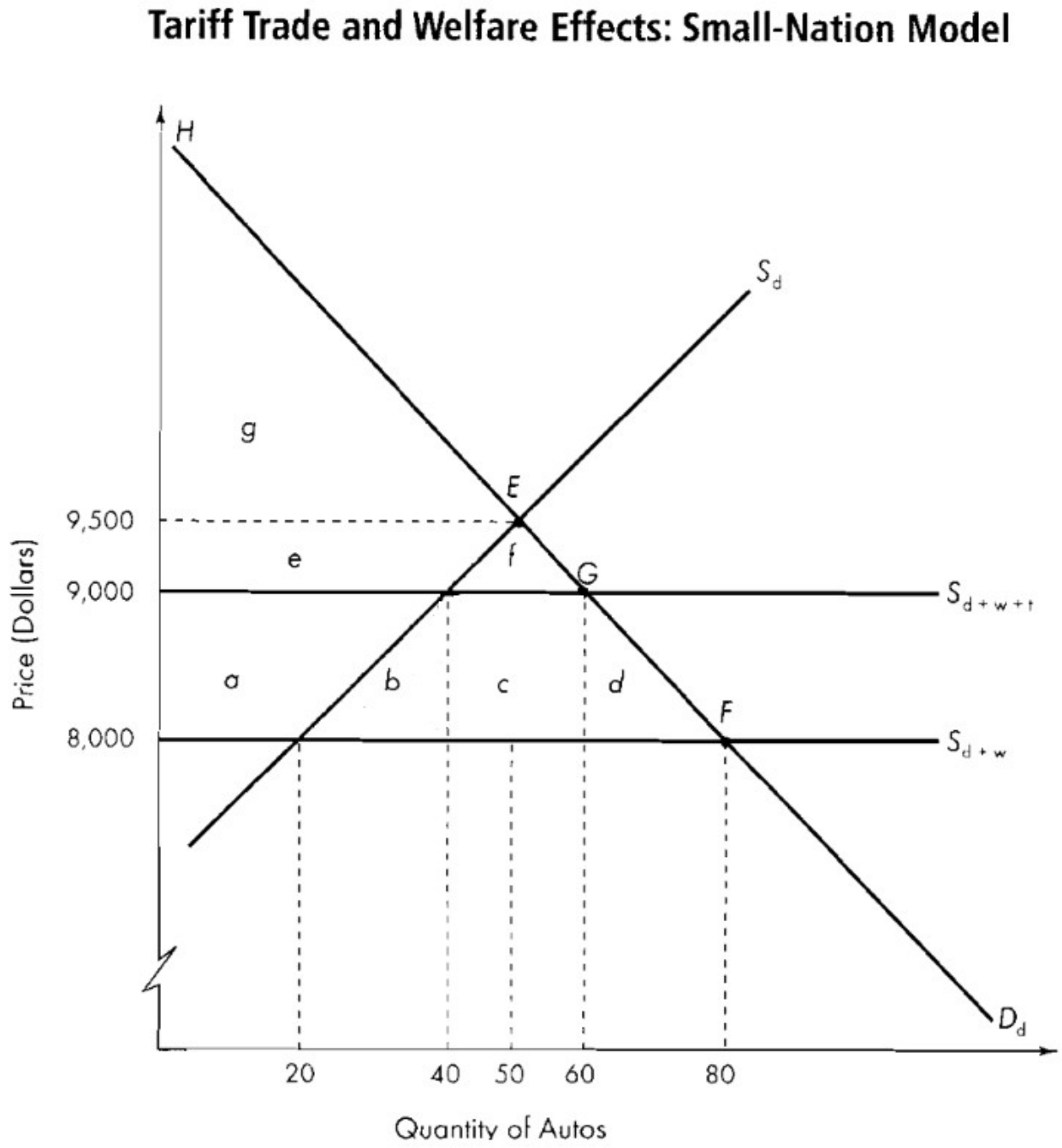
Figure 8-8 | Geometry of Producer Surplus

Producer surplus is equal to the area above the supply curve and below the price.



Producer surplus is an analogous concept. A producer willing to sell a good for $2 but receiving a price of $5 gains a producer surplus of $3. The same procedure used to derive consumer surplus from the demand curve can be used to derive producer surplus from the supply curve. If P is the price and Q the quantity supplied at that price, then producer surplus is P times Q minus the area under the supply curve up to Q (Figure 2). If the price is P1, the quantity supplied will be Ql, and producer surplus is measured by the area c. If the price rises to P2, the quantity supplied rises to Q2, and producer surplus rises to equal c plus the additional area d.

3. Tariff Welfare Effects: Small-Nation Model



To measure the effects of a tariff on a nation's welfare, consider the case of a nation whose imports constitute a very small portion of the world market supply. This small nation would be a price taker, facing a constant

world price level for its import commodity. This is not a rare case; many nations are not important enough to influence the terms at which they trade.

In Figure 3, the small nation before trade produces at market equilibrium point E, as determined by the intersection of its domestic supply and demand schedules. At equilibrium price $9,500, the quantity supplied is 50 units, and the quantity demanded is 50 units. Now suppose that the economy is opened to foreign trade and that the world auto price is $8,000, less than the domestic price.

Because the world market will supply an unlimited number of autos at price $8,000, the world supply schedule would appear as a horizontal (perfectly elastic) line. Line Sd+w shows the supply of autos available to the small-nation consumers from domestic and foreign sources combined. This overall supply schedule is the one that would prevail in free trade.

Free-trade equilibrium is located at point F in the figure. Here the number of autos demanded is 80 units, whereas the number produced domestically is 20 units. The excess domestic auto demand is fulfilled by imports of 60 autos. Compared with the situation before trade occurred, free trade results in a fall in the domestic auto price from $9,500 to $8,000. Consumers are better off because they can import more autos at a lower price. However, domestic producers now sell fewer autos at a lower price than they did before trade.

Under free trade, the domestic auto industry is being damaged by foreign competition. Industry sales and revenues are falling, and workers are losing their jobs. Suppose management and labor unite and convince the government to levy a protective tariff on auto imports. Assume the small nation imposes a tariff of $1,000 on auto imports. Because this small nation is not important enough to influence world market

conditions, the world supply price of autos remains constant, unaffected by the tariff. This means that the small nation's terms of trade remains unchanged. The introduction of the tariff raises the home price of imports by the full amount of the duty, and the increase falls entirely on the domestic consumer. The overall supply shifts upward by the amount of the tariff, from Sd+w to Sd+w+t.

The protective tariff results in a new equilibrium quantity at point G, where the domestic auto price is $9,000. Domestic production increases by 20 units, whereas domestic consumption falls by 20 units. Imports decrease from their pretariff level of 60 units to 20 units. This reduction can be attributed to falling domestic consumption and rising domestic production.

The effects of the tariff are to impede препятствовать imports and protect domestic producers. But what are the tariff's effects on the national welfare?

Figure 3 shows that before the tariff was levied, consumer surplus equaled areas a + b + c + d + e +f +g. With the tariff, consumer surplus falls to areas e + f + g, an overall loss in consumer surplus equal to areas a + b + c + d. This change affects the nation's welfare in a number of ways.

The welfare effects of a tariff include a revenue effect, a redistribution effect, a protective effect, and a consumption effect. As might be expected, the tariff provides the government with additional tax revenue and benefits domestic auto producers; at the same time, however, it wastes resources and harms the domestic consumer.

The tariff's revenue effect represents the government's collections of duty. Found by multiplying the number of imports (20 units) times the tariff ($1,000), government revenue equals area c, or $20,000. This represents the portion of the loss of consumer surplus, in monetary terms, that is transferred to the

government. For the nation as a whole, the revenue effect does not result in an overall welfare loss; consumer surplus is merely shifted from the private to the public sector.

The redistributive effect is the transfer of consumer surplus, in monetary terms, to the domestic producers of the import-competing product. This is represented by area a, which equals $30,000. Under the tariff, domestic home consumers will buy from domestic firms 40 autos at a price of $9,000, for a total expenditure of $360,000. At the free-trade price of $8,000, the same 40 autos would have yielded $320,000. The imposition of the tariff thus results in home producers' receiving additional revenues totaling areas a+ b, or $40,000 (the difference between $360,000 and $320,000). As the tariff encourages domestic production to rise from 20 to 40 units, however, producers must pay part of the increased revenue as higher costs of producing the increased

output, depicted by area b, or $10,000. The remaining revenue, $30,000, area a, is a net gain in producer income. The redistributive effect, therefore, is a transfer of income from consumers to producers. Like the revenue effect, it does not result in an overall loss of welfare for the economy.

Area b, totaling $10,000, is referred to as the protective effect of the tariff. It illustrates the loss to the domestic economy resulting from wasted resources used to produce additional autos at increasing unit costs. As the tariff-induced domestic output expands, resources that are less adaptable to auto production are eventually used, increasing unit production costs. This means that resources are used less efficiently than they would have been with free trade, in which case autos would have been purchased from low-cost foreign producers. A tariff's protective effect thus arises because less efficient domestic production is substituted for more efficient foreign

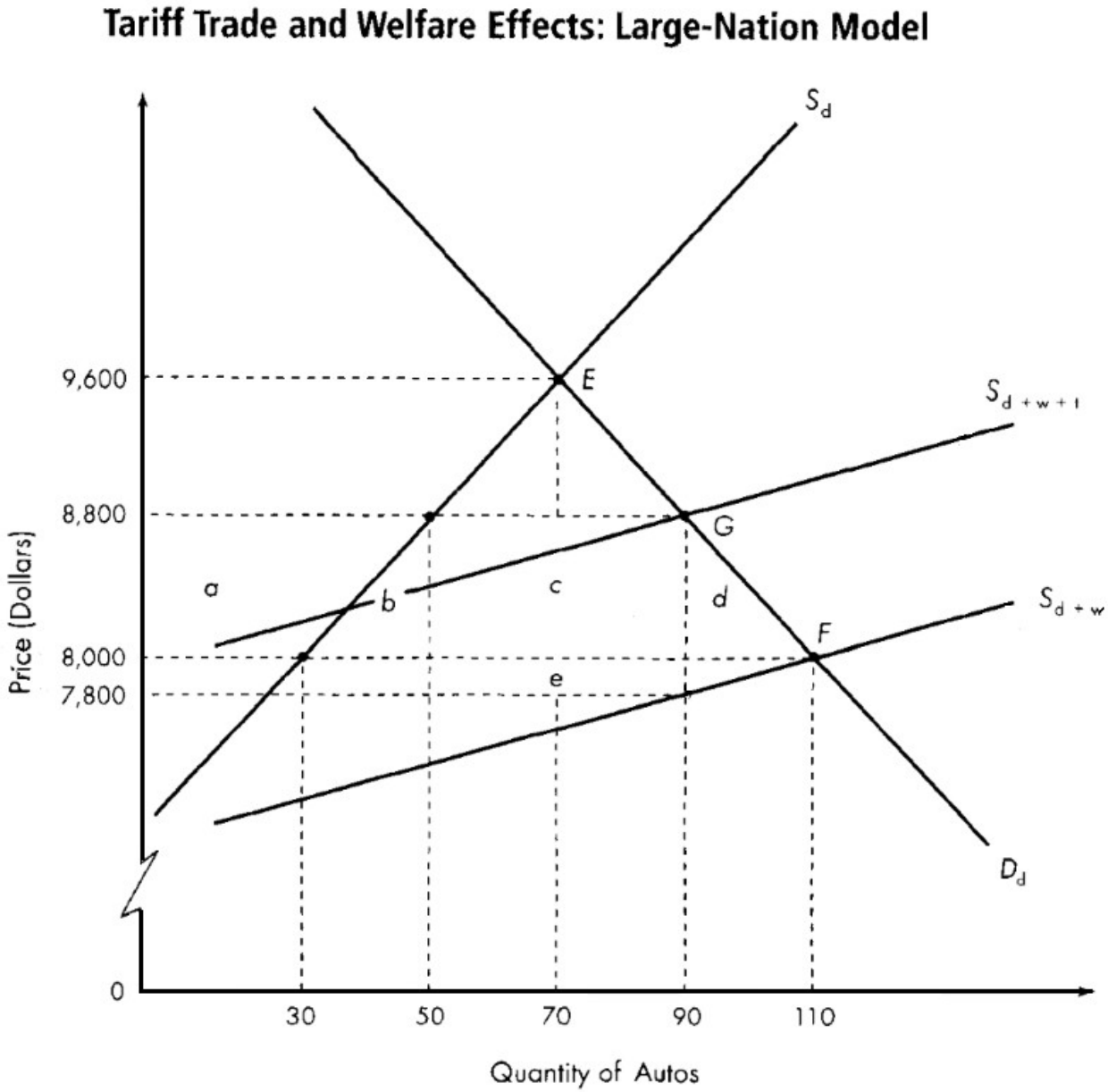
production. Referring to Figure 3, as domestic output increases from 20 to 40 units, the domestic cost of producing autos rises, as shown by supply schedule Sd'. But the same increase in autos could have been obtained at a unit cost of $8,000 before the tariff was levied. Area b, which depicts the protective effect, represents a loss to the economy.

Most of the consumer surplus lost because of the tariff has been accounted for: *c* went to the government as revenue; *a* was transferred to home suppliers as income; and *b* was lost by the economy because of inefficient domestic production. The consumption effect, represented by area *d*, which equals $10,000, is the residual остаток not accounted for elsewhere. It arises from the decrease in consumption resulting from the tariff's artificially increasing the price of autos from $8,000 to $9,000. A loss of welfare occurs because of the increased price and lower consumption. Like the protective effect, the consumption effect

represents a real cost to society, not a transfer to other sectors of the economy.

4. Tariff Welfare Effects: Large-Nation Model

Now consider the case of an importing nation that is large enough so that changes in the quantity of its imports, by means of tariff policy, influence the world price of the product.



What are the economic effects of an import tariff for a large country? Referring to Figure 4, line Sd represents the domestic supply schedule, and line Dd depicts the home demand schedule. Autarky equilibrium occurs at point E.

With free trade, the importing nation faces a total supply schedule of Sd+w.

This schedule shows the number of autos that both domestic and foreign producers together offer domestic consumers. The total supply schedule is upward sloping rather than horizontal because the foreign supply price is not a fixed constant. The price depends on the quantity purchased by an importing country when it is a large buyer of the product. With free trade, our country achieves market equilibrium at point F. The price of autos falls to $8,000, domestic consumption rises to 110 units, and domestic production falls to 30 units. Auto imports totaling 80 units satisfy the excess domestic demand.

Suppose that the importing nation imposes a specific tariff of $1,000 on imported autos. By increasing the selling cost, the tariff results in a shift in the total supply schedule from Sd+w to Sd+w+t. Market equilibrium shifts from point F to point G, while product price rises from $8,000 to $8,800. The tariff-levying nation's consumer surplus falls by an amount equal to areas a + b + c + d. Area *a*, totaling $32,000, represents the redistributive effect; this amount is transferred from domestic consumers to domestic producers. Areas *d* + *b* depict the tariff's deadweight loss, the deterioration in national welfare because of reduced consumption (consumption effect = $8,000) and an inefficient use of resources (protective effect = $8,000).

As in the small-nation example, a tariff's revenue effect equals the import tariff multiplied by the quantity of autos imported. This yields are as *c* + *e*, or $40,000. Notice, however, that the tariff revenue

accruing накапливающийся to the government now comes from foreign producers as well as domestic consumers. This differs from the small-nation case, in which the supply schedule is horizontal and the tariff's burden falls entirely on domestic consumers.

The tariff of $1,000 is added to the free-trade import price of $8,000. Although the price in the protected market will exceed the foreign supply price by the amount of the duty, it will not exceed the free-trade foreign supply price by this amount.

Compared with the free-trade foreign supply price, $8,000, the domestic consumers pay only an additional $800 per imported auto. This is the portion of the tariff shifted forward to the consumer. At the same time, the foreign supply price of autos falls by $200. This means that foreign producers earn smaller revenues, $7,800, for each auto exported. Because foreign production takes place under increasing-cost conditions, the reduction of imports from abroad

triggers a decline in foreign production, and unit costs decline. The reduction in the foreign supply price, $200, represents that portion of the tariff borne by the foreign producer. The levying of the tariff raises the domestic price of the import by only part of the duty as foreign producers lower their prices in an attempt to maintain sales in the tariff-levying nation. The importing nation finds that its terms of trade has improved if the price it pays for auto imports decreases while the price it charges for its exports remains the same.

Thus, the revenue effect of an import tariff in the large-nation case includes two components. The first is the amount of tariff revenue shifted from domestic consumers to the tariff-levying government.

In Figure 4, this equals the level of imports (40 units) multiplied by the portion of the import tariff borne by domestic consumers ($800). Area *c* depicts the domestic revenue effect, which equals $32,000. The

second element is the tariff revenue extracted from foreign producers in the form of a lower supply price. Found by multiplying auto imports (40 units) by the portion of the tariff falling on foreign producers ($200), the terms-of-trade effect is shown as area *e*, which equals $8,000. Note that the terms-of-trade effect represents a redistribution of income from the foreign nation to the tariff-levying nation because of the new terms of trade. The tariff's revenue effect thus includes the domestic revenue effect and the terms-of-trade effect.

A nation that is a major importer of a product is in a favorable trade situation. It can use its tariff policy to improve the terms at which it trades, and therefore its national welfare. But remember that the negative welfare effect of a tariff is the deadweight loss of consumer surplus that results from the protection and consumption effects. Referring to Figure 4, to decide if a tariff-levying nation can improve its national

welfare, we must compare the impact of the deadweight loss (areas b + d) with the benefits of a more favorable terms of trade (area e). The conclusions regarding the welfare effects of a tariff are as follows:

1. If e > (b + d), national welfare is increased.
2. If e = (b + d), national welfare remains constant.
3. If e < (b + d), national welfare is diminished.

In the preceding example, the domestic economy's welfare would have declined by an amount equal to $8,000. This is because the deadweight welfare losses, totaling $16,000, more than offset the $8,000 gain in welfare attributable to the terms-of-trade effect.