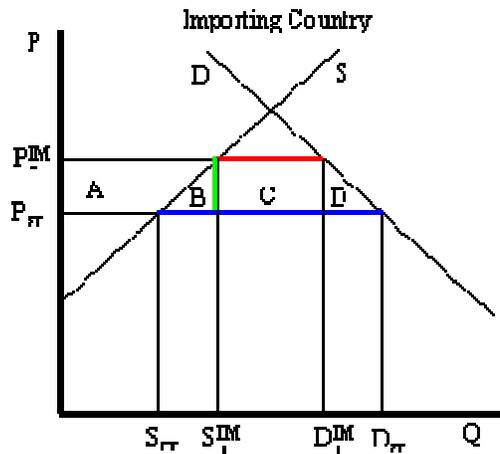


Welfare Effects of a Tariff: Small Country

Consider a market in a small importing country that faces an international or world price of P_{FT} in free trade. The free trade equilibrium is depicted in the adjoining diagram where P_{FT} is the free trade equilibrium price. At that price, domestic demand is given by D_{FT} , domestic supply by S_{FT} and imports by the difference $D_{FT} - S_{FT}$ (the blue line in the figure).



When a specific tariff is implemented by a small country it will raise the domestic price by the full value of the tariff. Suppose the price in the importing country rises to P_{TM} because of the tariff. In this case the tariff rate would be $t = P_{TM} - P_{FT}$, equal to the length of the green line segment in the diagram.

The following Table provides a summary of the direction and magnitude of the welfare effects to producers, consumers and the governments in the importing country. The aggregate national welfare effects is also shown. Positive welfare effects are shown in black, negative effects are shown in red.

Welfare Effects of an Import Tariff	
	Importing Country
Consumer Surplus	- (A + B + C + D)
Producer Surplus	+ A
Govt. Revenue	+ C
National Welfare	- B - D

Tariff Effects on:

Importing Country Consumers - Consumers of the product in the importing country are worse-off as a result of the tariff. The increase in the domestic price of both imported goods and the domestic substitutes reduces consumer surplus in the market. Refer to the Table and Figure to see how the magnitude of the change in consumer surplus is represented.

Importing Country Producers - Producers in the importing country are better-off as a result of the tariff. The increase in the price of their product increases producer surplus in the industry. The price increases also induces an increase in output of existing firms (and perhaps the addition of new firms), an increase in employment, and an increase in profit and/or payments to fixed costs. Refer to the Table and Figure to see how the magnitude of the change in producer surplus is represented.

Importing Country Government - The government receives tariff revenue as a result of the tariff. Who will benefit from the revenue depends on how the government spends it. These funds help support diverse government spending programs, therefore, someone within the country will be the likely recipient of these benefits. Refer to the Table and Figure to see how the magnitude of the tariff revenue is represented.

Importing Country - The aggregate welfare effect for the country is found by summing the gains and losses to consumers, producers and the government. The net effect consists of two components: a negative production efficiency loss (B), and a negative consumption efficiency loss (D). The two losses together are typically referred to as "deadweight losses." Refer to the Table and Figure to see how the magnitude of the change in national welfare is represented.

Because there are only negative elements in the national welfare change, the net national welfare effect of a tariff must be negative. This means that **a tariff implemented by a "small" importing country must reduce national welfare.**

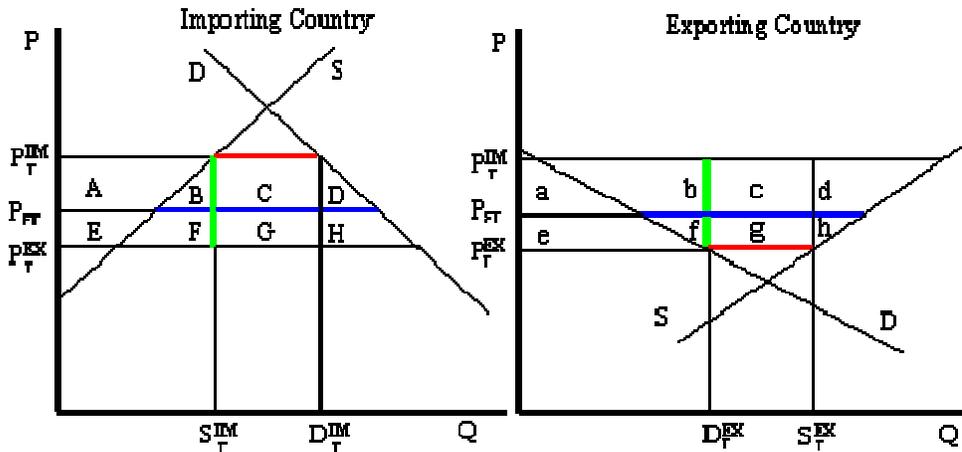
In summary,

- 1) whenever a "small" country implements a tariff, national welfare falls.
- 2) the higher the tariff is set, the larger will be the loss in national welfare.
- 3) the tariff causes a redistribution of income. Producers and the recipients of government spending gain, while consumers lose.
- 4) because the country is assumed "small," the tariff has no effect upon the price in the rest of the world, therefore there are no welfare changes for producers or consumers there. Even though imports are reduced, the related reduction in exports by the rest of the world is assumed to be too small to have a noticeable impact.

Source: Internationalecon.com

Welfare Effects of a Tariff: Large Country

Suppose for simplicity that there are only two trading countries, one importing and one exporting country. The supply and demand curves for the two countries are shown in the adjoining diagram. P_{FT} is the free trade equilibrium price. At that price, the excess demand by the importing country equals excess supply by the exporter.



The quantity of imports and exports is shown as the blue line segment on each country's graph. (That's the horizontal distance between the supply and demand curves at the free trade price) When a large importing country implements a tariff it will cause an increase in the price of the good on the domestic market and a decrease in the price in the rest of the world (RoW). Suppose after the tariff the price in the importing country rises to P_T^{IM} and the price in the exporting country falls to P_T^{EX} . If the tariff is a specific tax then the tariff rate would be $T = P_T^{IM} - P_T^{EX}$, equal to the length of the green line segment in the diagram. The following Table provides a summary of the direction and magnitude of the welfare effects to producers, consumers and the governments in the importing and exporting countries. The aggregate national welfare effects and the world welfare effects are also shown. Online, or with a color print-out, positive welfare effects are shown in black, negative effects in red.

Welfare Effects of an Import Tariff		
	Importing Country	Exporting Country
Consumer Surplus	$-(A + B + C + D)$	$+ e$
Producer Surplus	$+ A$	$-(e + f + g + h)$
Govt. Revenue	$+(C + G)$	0
National Welfare	$+ G - (B + D)$	$-(f + g + h)$
World Welfare	$-(B + D) - (f + h)$	

Tariff Effects on:

Importing Country Consumers - Consumers of the product in the importing country suffer a reduction in well-being as a result of the tariff. The increase in the domestic price of both imported goods and the domestic substitutes reduces the amount of consumer surplus in the market. Refer to the Table and Figure to see how the magnitude of the change in consumer surplus is represented.

Importing Country Producers - Producers in the importing country experience an increase in well-being as a result of the tariff. The increase in the price of their product on the domestic market increases producer surplus in the industry. The price increases also induces an increase in output of existing firms (and perhaps the addition of new firms), an increase in employment, and an increase in profit and/or payments to fixed costs. Refer to the Table and Figure to see how the magnitude of the change in producer surplus is represented.

Importing Country Government - The government receives tariff revenue as a result of the tariff. Who benefits from the revenue depends on how the government spends it. Typically the revenue is simply included as part of the general funds collected by the government from various sources. In this case it is impossible to identify precisely who benefits. However, these funds help support many government spending programs which presumably help either most people in the country, as is the case with public goods, or is targeted at certain worthy groups. Thus, someone within the country is the likely recipient of these benefits. Refer to the Table and Figure to see how the magnitude of the tariff revenue is represented.

Importing Country - The aggregate welfare effect for the country is found by summing the gains and losses to consumers, producers and the government. The net effect consists of three components: a positive terms of trade effect (G), a negative production distortion (B), and a negative consumption distortion (D). Refer to the Table and Figure to see how the magnitude of the change in national welfare is represented.

Because there are both positive and negative elements, the net national welfare effect can be either positive or negative. The interesting result, however, is that it can be *positive*. This means that **a tariff implemented by a "large" importing country may raise national welfare**.

Generally speaking,

1) whenever a "large" country implements a small tariff, it will raise national welfare.

2) if the tariff is set too high, national welfare will fall

and 3) there will be a positive optimal tariff that will maximize national welfare.

However, it is also important to note that everyone's welfare does not rise when there is an increase in national welfare. Instead there is a redistribution of income. Producers of the product and recipients of government spending will benefit, but consumers will lose. A national welfare increase, then, means that the sum of the gains exceeds the sum of the losses across all individuals in the economy. Economists generally argue that, in this case, compensation from winners to losers can potentially alleviate the redistribution problem.

Tariff Effects on:

Exporting Country Consumers - Consumers of the product in the exporting country experience an increase in well-being as a result of the tariff. The decrease in their domestic price raises the amount of consumer surplus in the market. Refer to the Table and Figure to see how the magnitude of the change in consumer surplus is represented.

Exporting Country Producers - Producers in the exporting country experience a decrease in well-being as a result of the tariff. The decrease in the price of their product in their own market decreases producer surplus in the industry. The price decline also induces a decrease in output, a decrease in employment, and a decrease in profit and/or payments to fixed costs. Refer to the Table and Figure to see how the magnitude of the change in producer surplus is represented.

Exporting Country Government - There is no effect on the exporting country government revenue as a result of the importer's tariff.

Exporting Country - The aggregate welfare effect for the country is found by summing the gains and losses to consumers and producers. The net effect consists of three components: a negative terms of trade effect (g), a negative consumption distortion (f), and a negative production distortion (h). Refer to the Table and Figure to see how the magnitude of the change in national welfare is represented.

Since all three components are negative, the importer's tariff must result in a reduction in national welfare for the exporting country. However, it is important to note that a

redistribution of income occurs, i.e., some groups gain while others lose. In this case the sum of the losses exceeds the sum of the gains.

Tariff Effects on:

World Welfare - The effect on world welfare is found by summing the national welfare effects in the importing and exporting countries. By noting that the terms of trade gain to the importer is equal to the terms of trade loss to the exporter, the world welfare effect reduces to four components: the importer's negative production distortion (B), the importer's negative consumption distortion (D), the exporter's negative consumption distortion (f), and the exporter's negative production distortion (h). Since each of these is negative, **the world welfare effect of the import tariff is negative**. The sum of the losses in the world exceeds the sum of the gains. In other words, we can say that **an import tariff results in a reduction in world production and consumption efficiency**.

Source: Internationalecon.com