



Tariffs

Class overview

1. Small economy
2. Large economy





Movements away from free trade

- While it is generally accepted that free trade best enhances societal welfare, complete free trade is seldom practiced.
- This situation generates two questions
 - Why is complete free trade seldom practiced?
 - What are the effects of deviating from free trade?
- This chapter considers the second question by considering the effects of employing one common tool of deviating from free trade – the tariff.



Types of tariffs

- Import vs. export tariffs
 - An import tariff is a tax (or duty) on imported goods or services.
 - This is the most common form of tariff.
 - An export tariff is a tax on exported goods or services.
 - This is rarely seen in developed countries but is occasionally practiced in developing countries to generate government revenue.



Types of tariffs

- Import vs. export tariffs
- **Ad valorem tariff**
 - A fixed percentage tax on the traded commodity.



Types of tariffs

- Import vs. export tariffs
- Ad valorem tariff
- **Specific tariff**
 - A fixed sum tax per unit of a traded commodity.



Types of tariffs

- Import vs. export tariffs
- Ad valorem tariff
- Specific tariff
- **A compound tariff**
 - A combination of an ad valorem and specific tariff.



Small vs. large

- The implications of interfering with trade differ depending on the nature of the country.
 - The key distinction is between whether the country is “small” or “large.”



Small vs. large

- The implications of interfering with trade differ depending on the nature of the country.
- A “small” country is one where changes in its domestic market do not alter the international price of the commodity.
 - In the case of tariff, this means that the imposition of a tariff does not alter the international price.
 - In other words, the country acts as a “price-taker” in the international market.



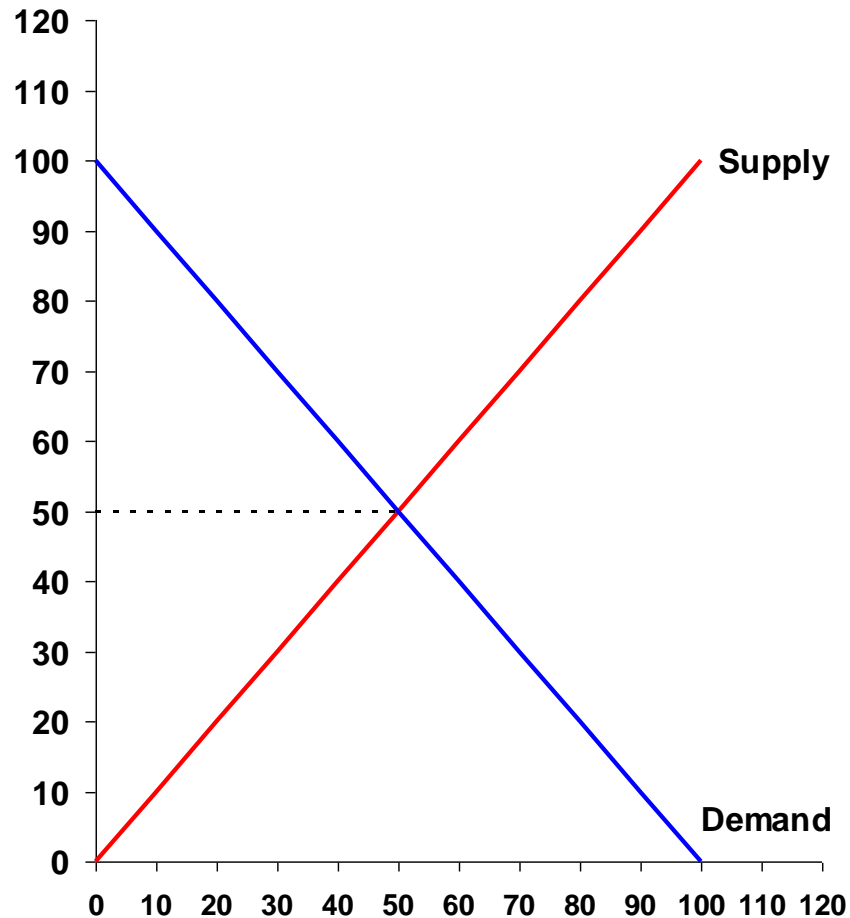
Small vs. large

- The implications of interfering with trade differ depending on the nature of the country.
- A “small” country is one where changes in its domestic market do not alter the international price of the commodity.
- A “large” country is one where changes in its domestic market do alter the international price of the commodity.
 - In the case of a tariff, this means that the imposition of a tariff does alter the international price.



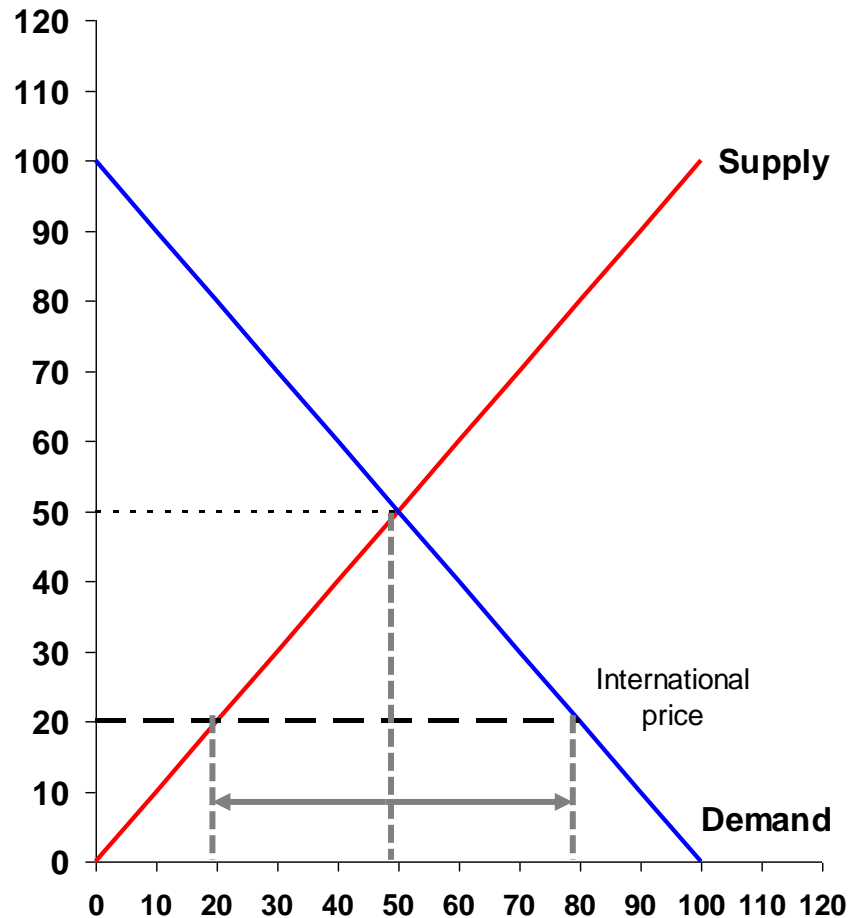
Effects of a tariff: small country

- The effects of a tariff are easily seen in a market supply and demand diagram.
- In this market, the autarky equilibrium occurs a price of \$50 and quantity of 50.



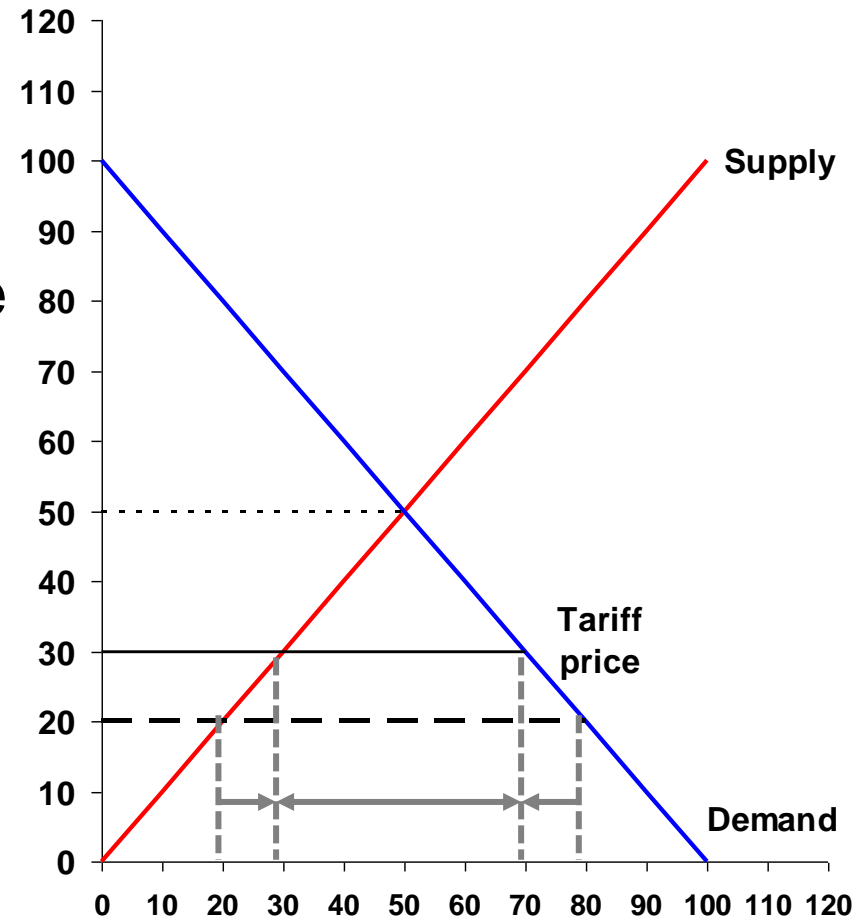
Effects of a tariff: small country

- In this market, if the international price is \$20, the country will be an importer of the item.
- Domestic production will fall from 50 to 20.
- Domestic consumption will rise from 50 to 80.
- These changes generate imports of 60 units.



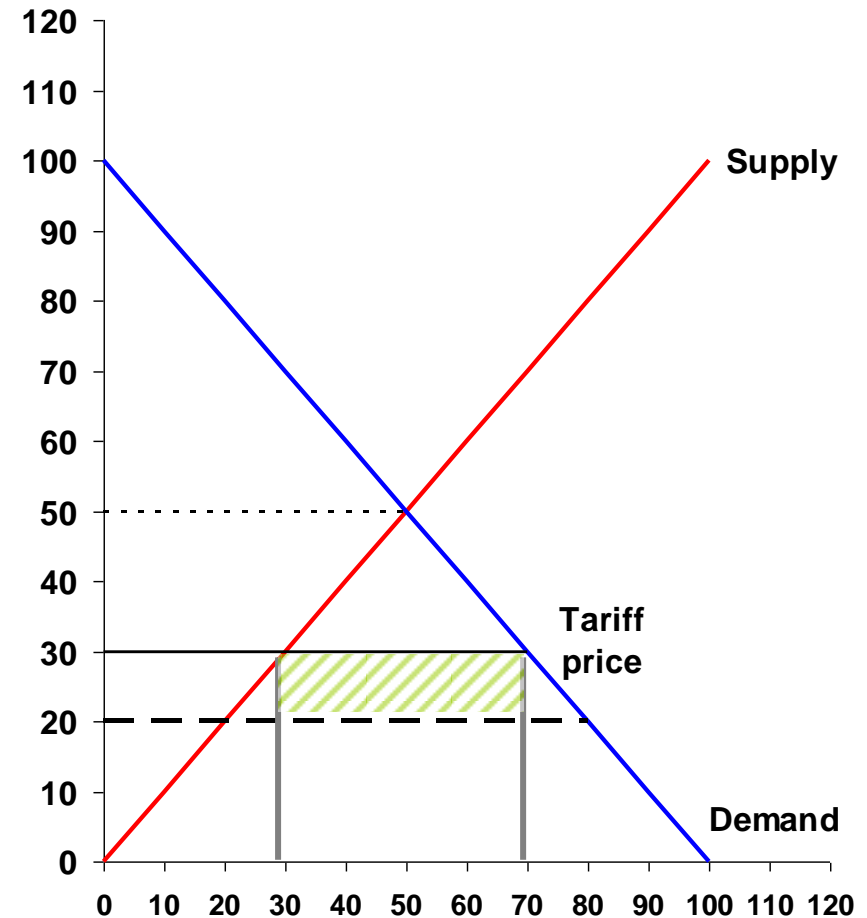
Effects of a tariff: small country

- If a 50% ad valorem tariff is placed on imports, the domestic price rises from \$20 (the international price) to the tariff price of \$30.
- Domestic production increases from 20 to 30.
- Domestic consumption falls from 80 to 70.
- Imports fall to 40.



Effects of a tariff: small country

- The final effect is that the government will begin collecting tariff revenue in this market.
 - The amount of the revenue is $\$10 \times 40 = \400 per unit of time.





Welfare effects: small country

- To show the welfare changes from the tariff the concepts of consumer and producer surplus must be considered.
- Consumer surplus is the difference between what consumers are willing to pay for a specific amount of a commodity and what they actually pay for it.
 - Graphically, consumer surplus is the area under the demand curve and above the price paid on every unit purchased.

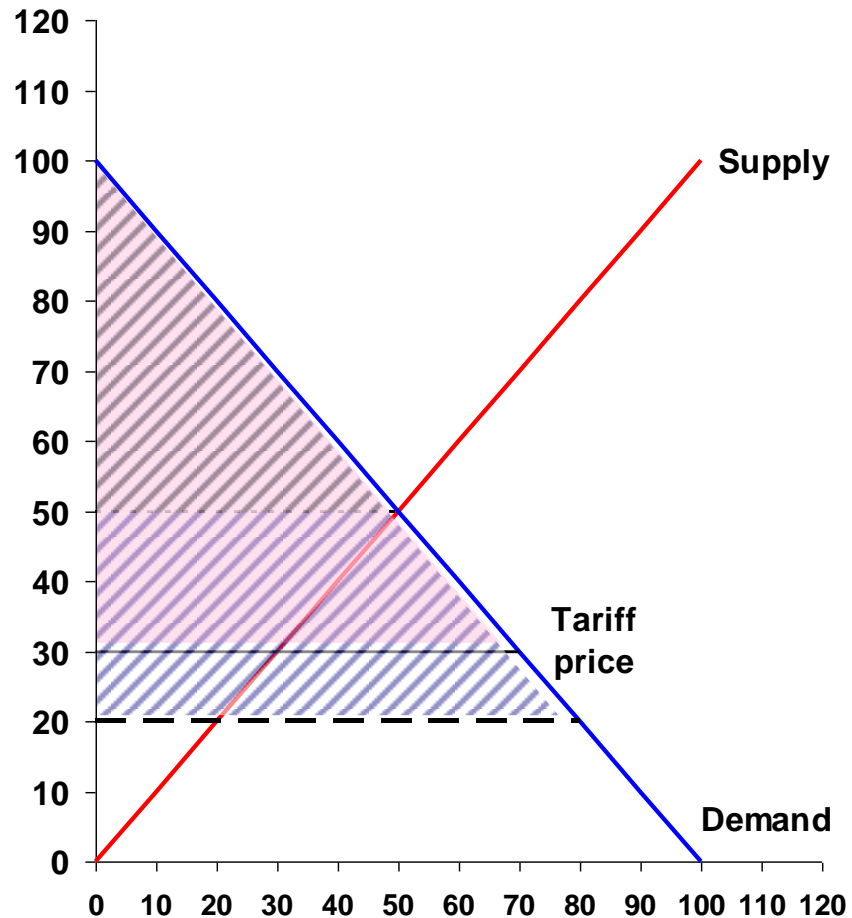


Welfare effects: small country

- Consumer surplus is the difference between what consumers are willing to pay for a specific amount of a commodity and what they actually pay for it.
- Producer surplus is the extra payment received by producers above what needed to have been paid to cause them to produce the commodity.
 - Graphically, producer surplus is the area below the price received and above the supply curve on every unit sold.

Welfare effects: small country

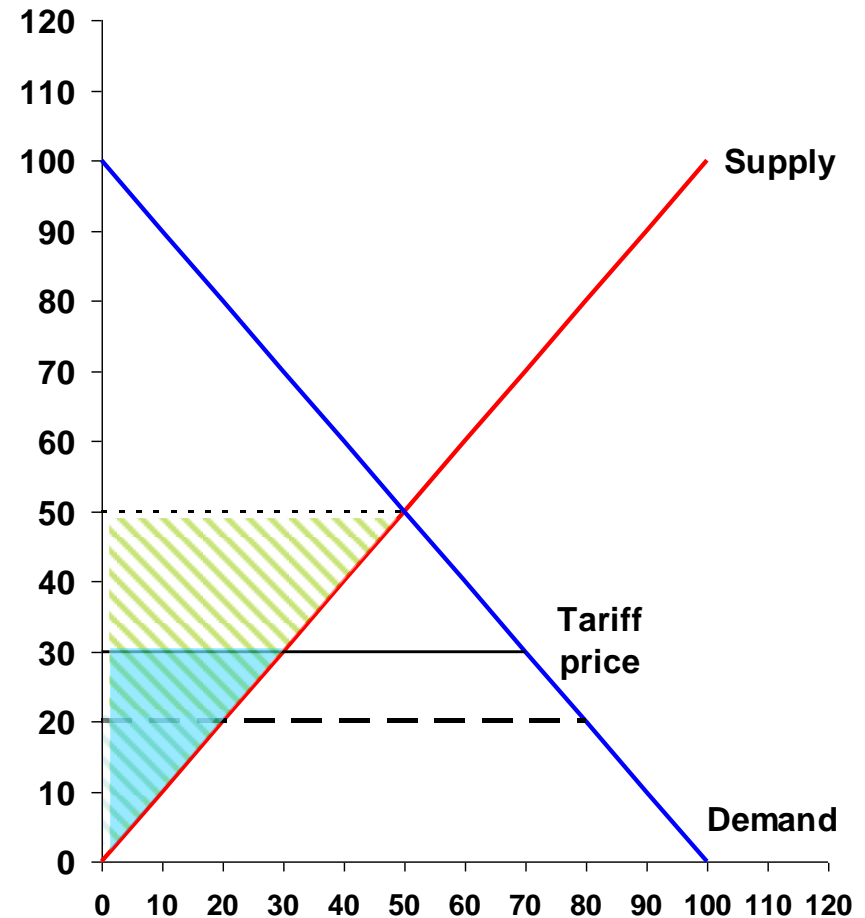
- Consumer surplus at autarky is given by the indicated region.
- When the nation moves to free trade this surplus increases.
- The imposition of a tariff reduces this surplus by the difference between the international and the tariff price.





Welfare effects: small country

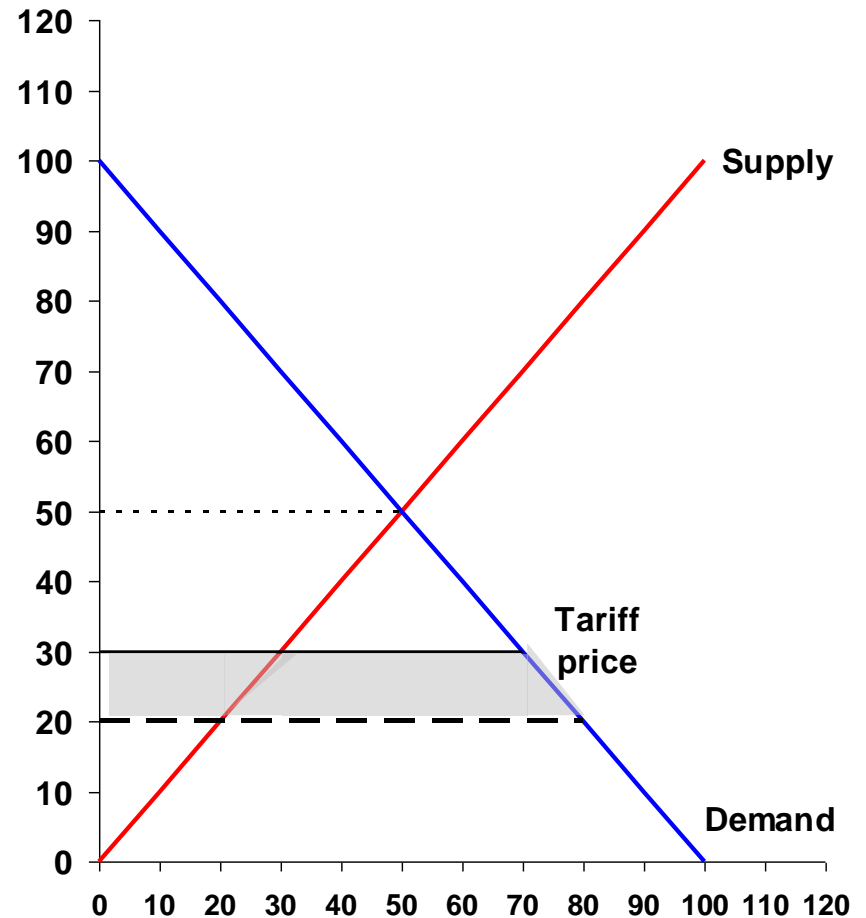
- Producer surplus at autarky is given by the shaded region.
- Opening the economy to free trade reduces the surplus to the smaller shaded region.
- Imposing a tariff increases the producer surplus.





Welfare effects: small country

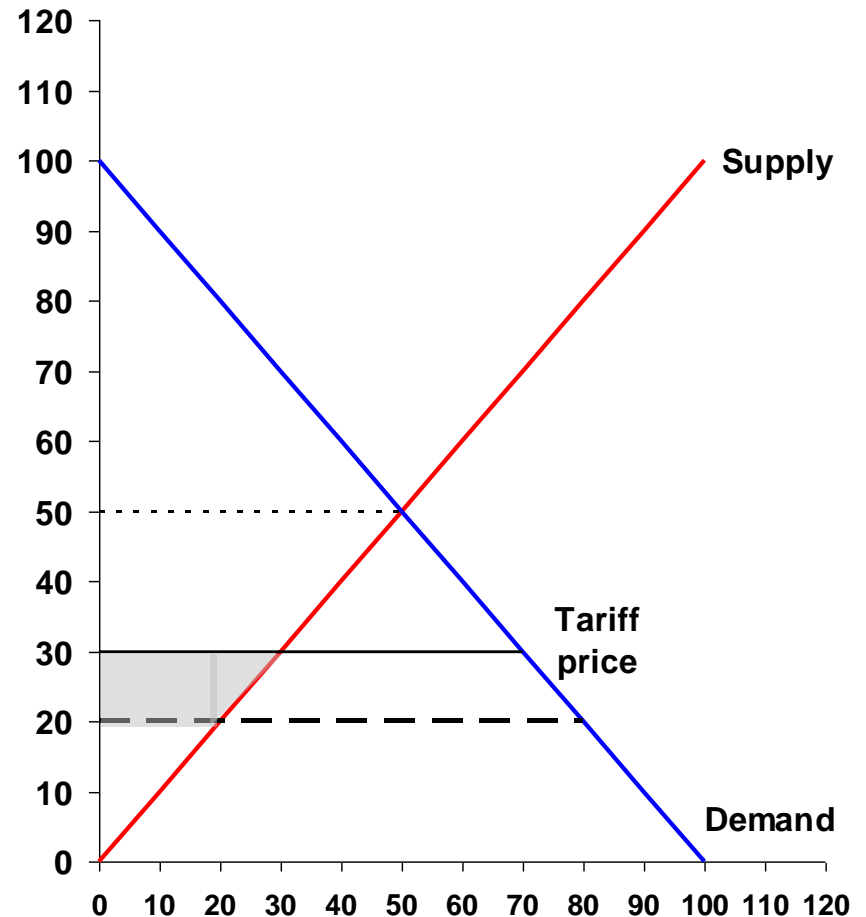
- The losses and gains from the imposition of a tariff exist in the shaded region.
- The entire region is lost consumer surplus.
 - The dollar value of this region is $(\$10 \times 70) + (\frac{1}{2} \times \$10 \times 10)$ or \$750.





Welfare effects: small country

- The entire region is lost consumer surplus.
- Of this, the portion above the supply curve is gained by producers.
 - The dollar value of this region is $(\$10 \times 20) + (\frac{1}{2} \times \$10 \times 10)$ or \$250.





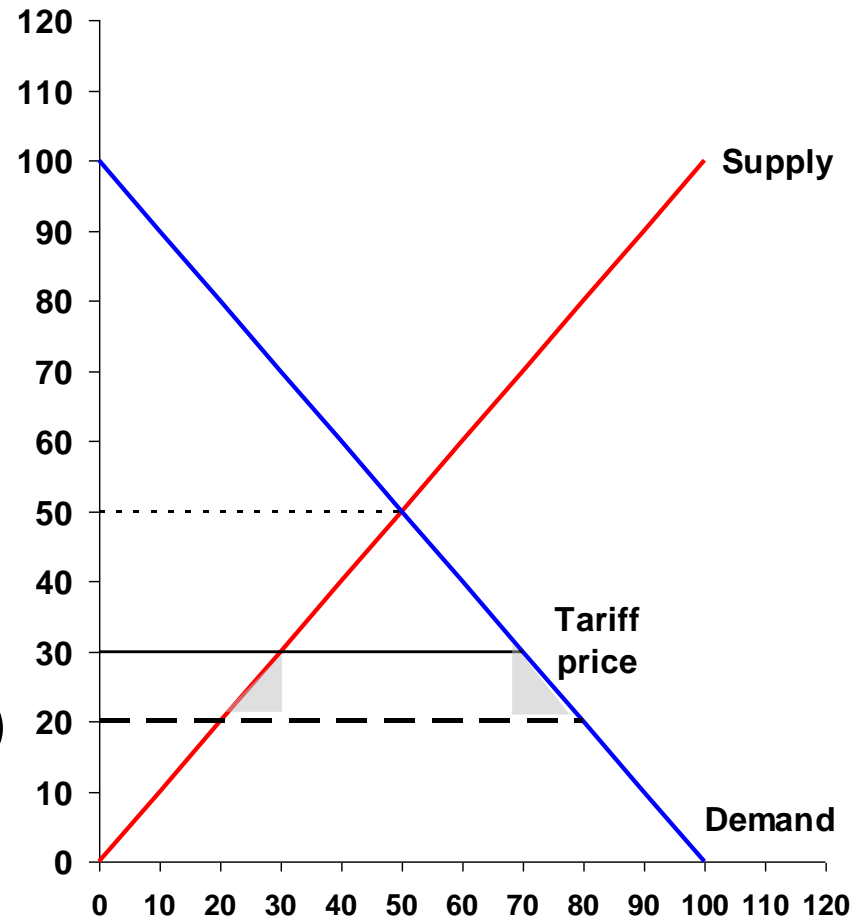
Welfare effects: small country

- The entire region is lost consumer surplus.
- Of this, the portion above the supply curve is gained by producers.
- The rectangular area is gained by the government as tariff revenue.
 - The dollar value of this region is $\$10 \times 40$ or $\$400$.



Welfare effects: small country

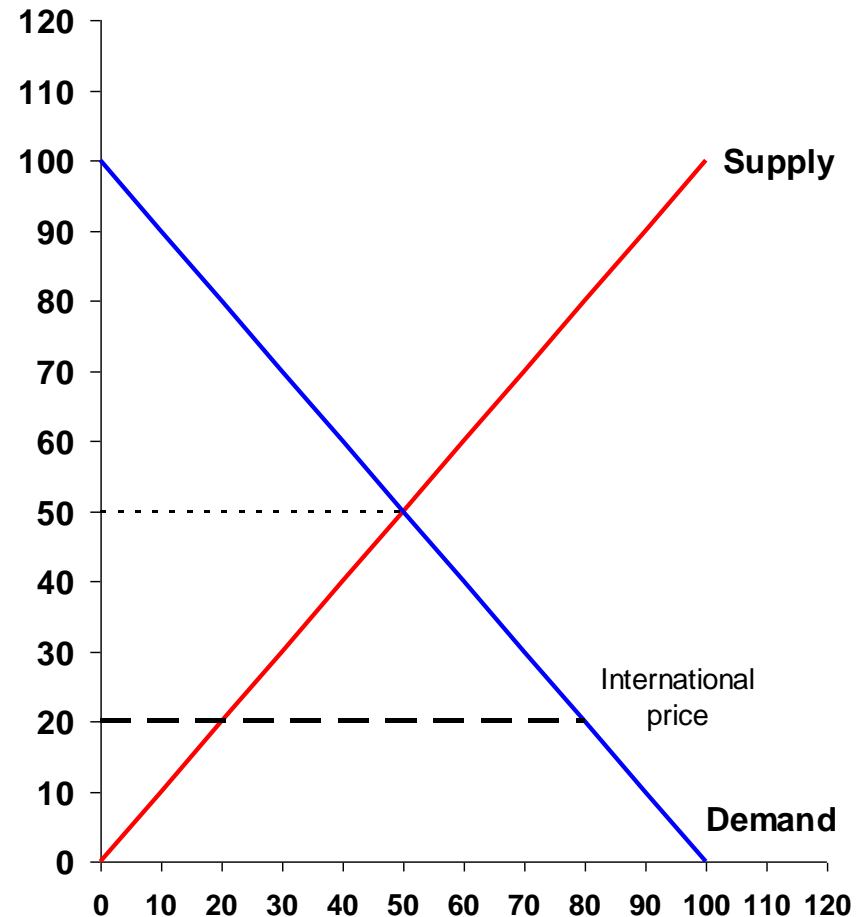
- This leaves a net welfare loss to society of the two triangular shaded regions.
- These regions are known as the deadweight loss of a tariff.
 - These have a dollar value of $\$750 - \250 (gained by producers) - $\$400$ (gained by the government) or $\$100$.





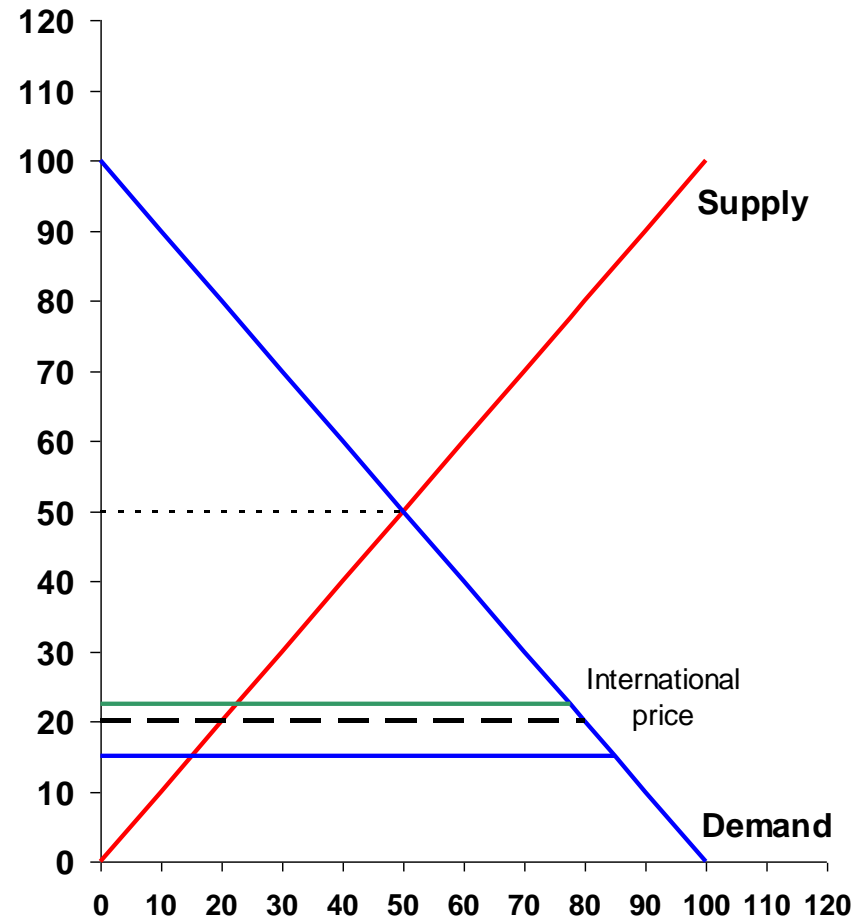
Effects of a tariff: large country

- The effects of a tariff on a large country differ from that in a small country because the imposition of a tariff results in a fall in import demand that lowers the international price.
 - This is known as the terms of trade effect.



Effects of a tariff: large country

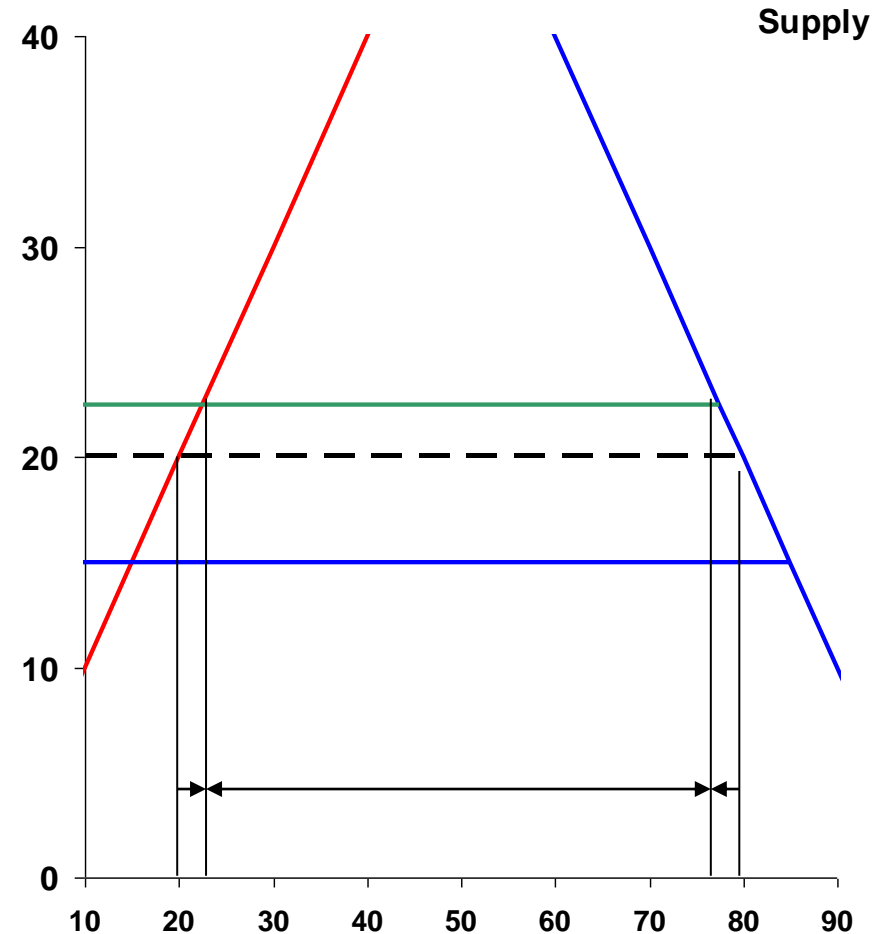
- In this case, the 50% tariff results in a drop of the international price from \$20 to \$15.
 - This takes the tariff price to \$22.50 per unit.
- The effects of this change are more clearly seen through a narrowing of focus in the graph.





Effects of a tariff: large country

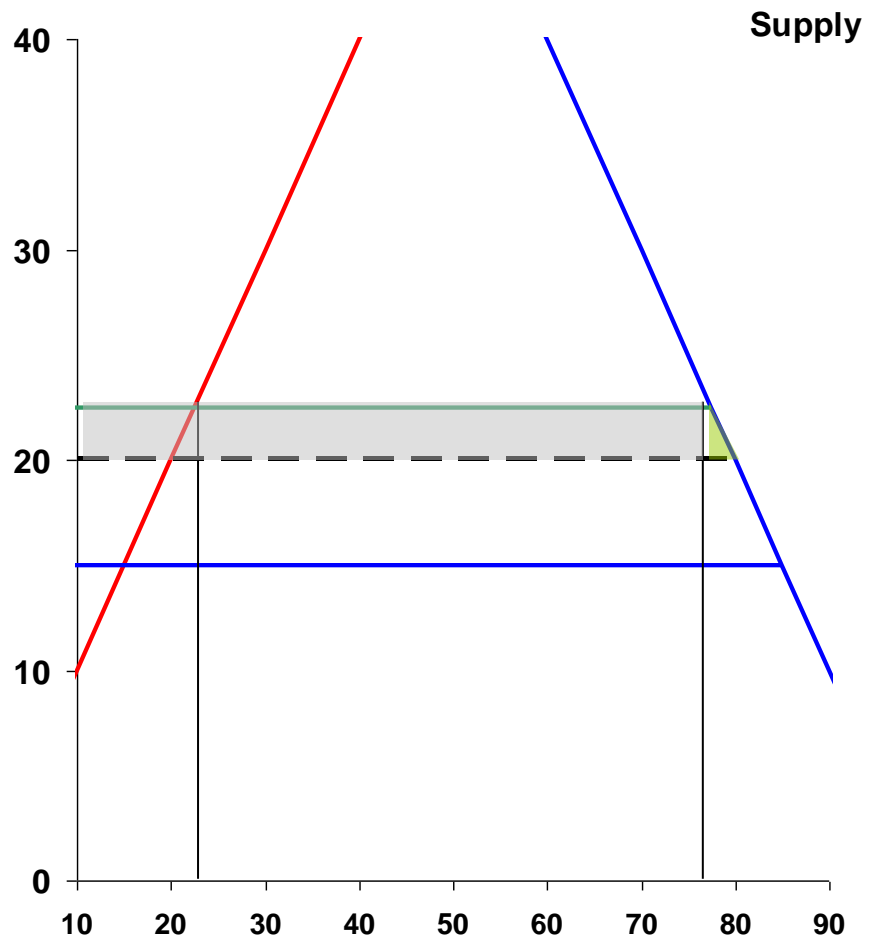
- With the tariff and improvement in the terms of trade, production rises from 20 to 22.5 units.
- Consumption falls from 80 to 77.5 units.
- Imports fall from 60 to 55 units.





Welfare effects: large country

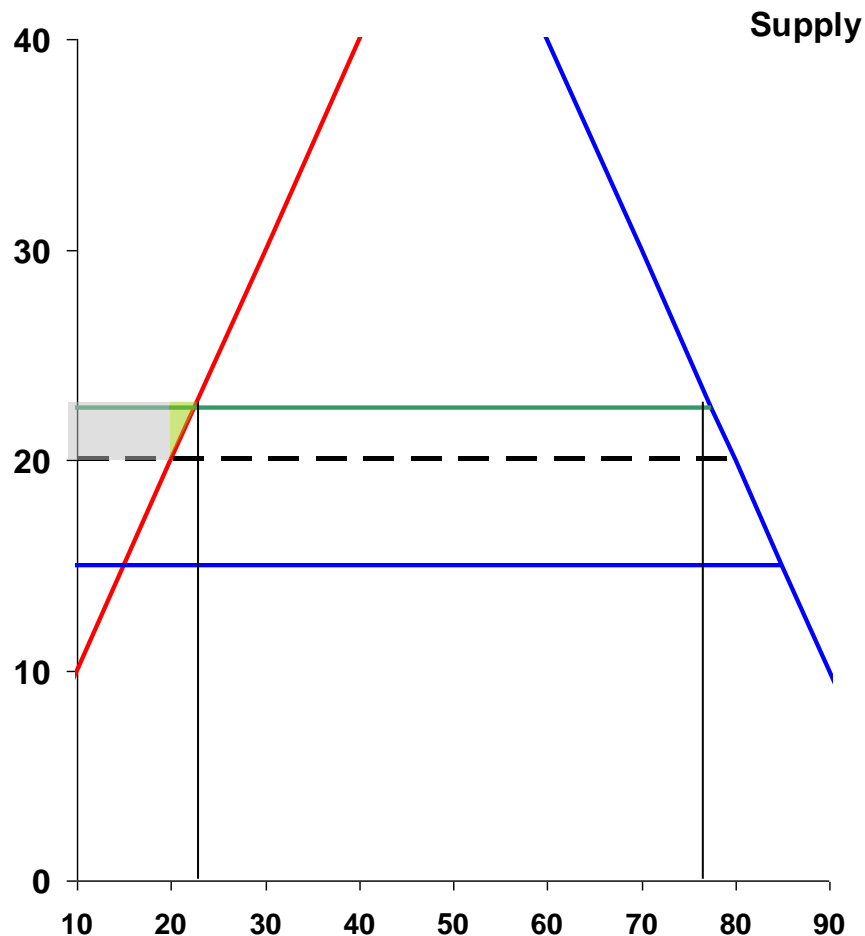
- Consumer surplus declines by the shaded region.
 - This has a dollar value of $(\$2.50 \times 77.5) + (\frac{1}{2} \times \$2.50 \times 2.5) = \$196.875$





Welfare effects: large country

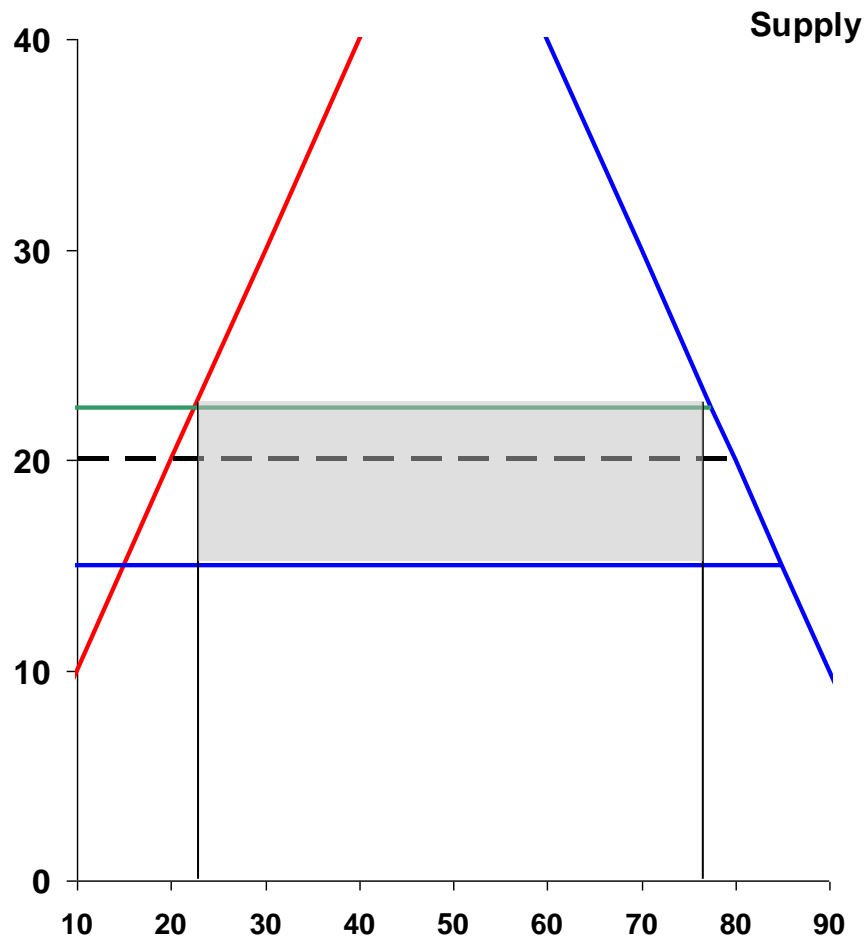
- Consumer surplus declines by the shaded region.
- Producer surplus increases by the shaded region offsetting part of the consumer loss.
 - This has a dollar value of $(\$2.50 \times 20) + (\frac{1}{2} \times \$2.50 \times 2.5) = \$53.125$





Welfare effects: large country

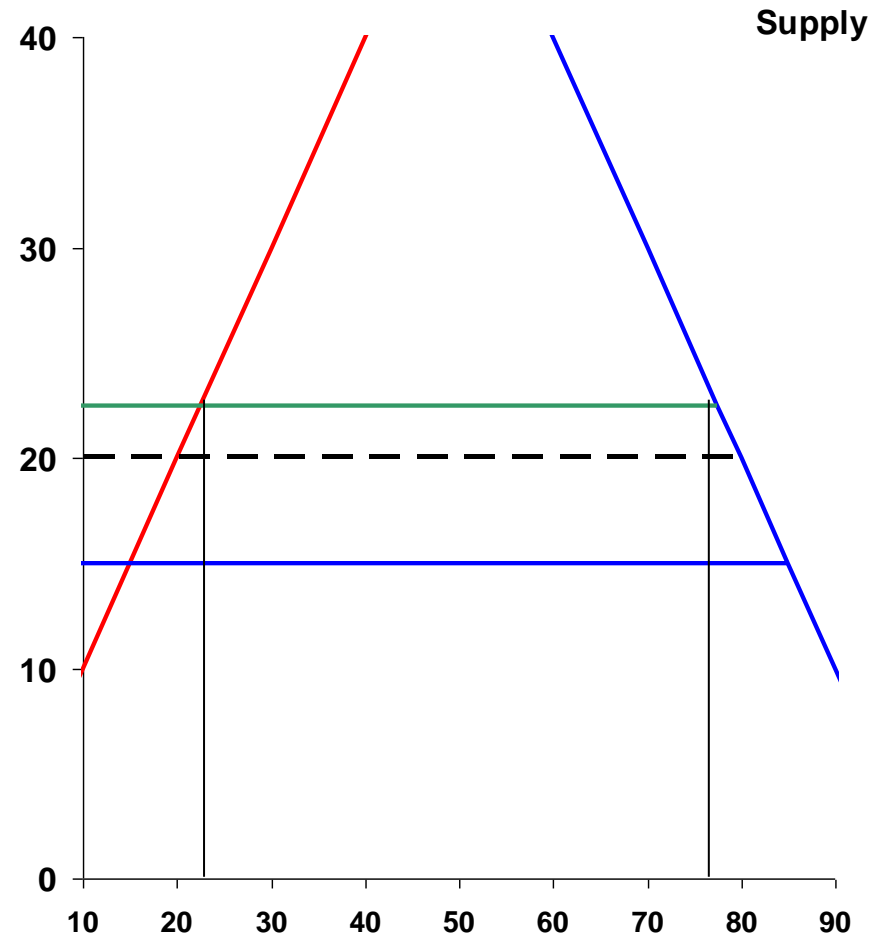
- Consumer surplus declines by the shaded region.
- Producer surplus increases by the shaded region offsetting part of the consumer loss.
- Government revenue increases by $\$10 \times 75$ or $\$750$.





Welfare effects: large country

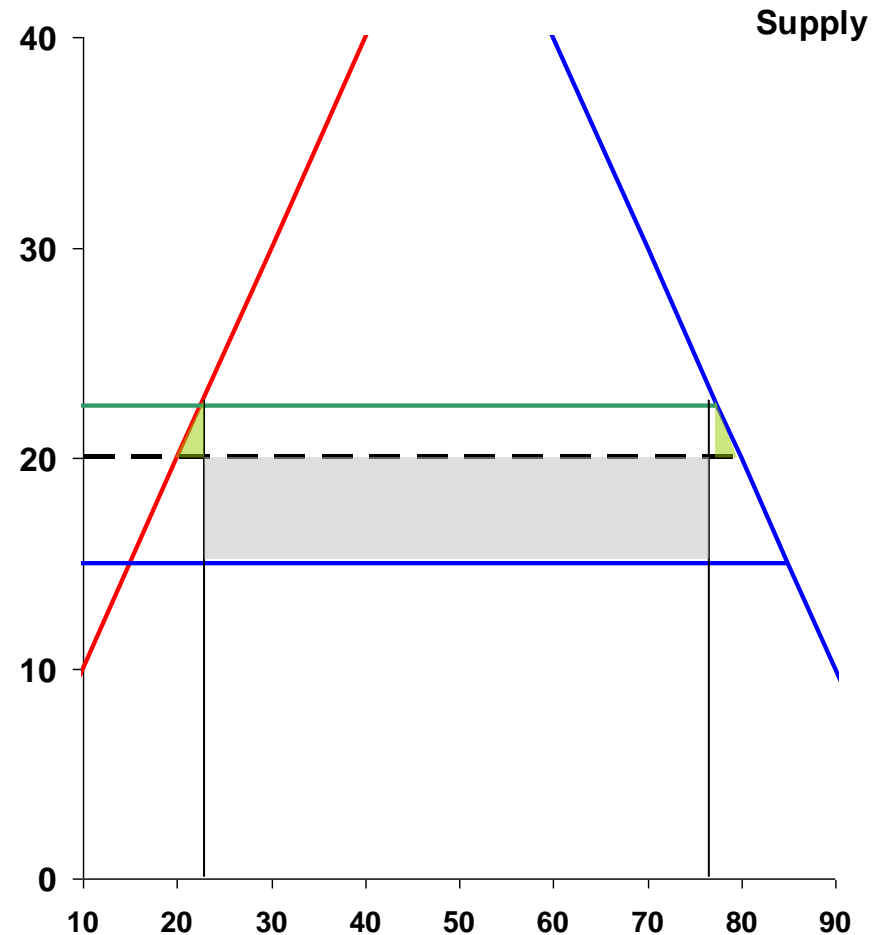
- The net effect is a welfare gain.
 - Consumer surplus falls by \$196.875
 - Producer surplus rises by \$53.125
 - Government revenue increases by \$750
 - This generates a net gain of \$500 for this case.





Welfare effects: large country

- This result arises as the improvement in the terms of trade more than offsets the potential deadweight loss of the tariff.
 - Welfare lost
 - Welfare gained





Optimum tariff

- The previous example demonstrates that it is possible for the imposition of a tariff in a large country to improve societal welfare.
- An optimal tariff is the tariff rate that maximizes the benefit resulting from the imposition of a tariff.
 - The gain comes from the improvement in the terms of trade.
- Positive welfare gains are always possible from tariff imposition in large countries.



A concern about the optimal tariff

- By itself, the existence of an optimum tariff appears to be a strong argument for interfering with free trade.
- It is important to note that the positive welfare gains exist only if no retaliation in other markets occurs following the imposition of a tariff.
 - History does not support the no retaliation assumption.