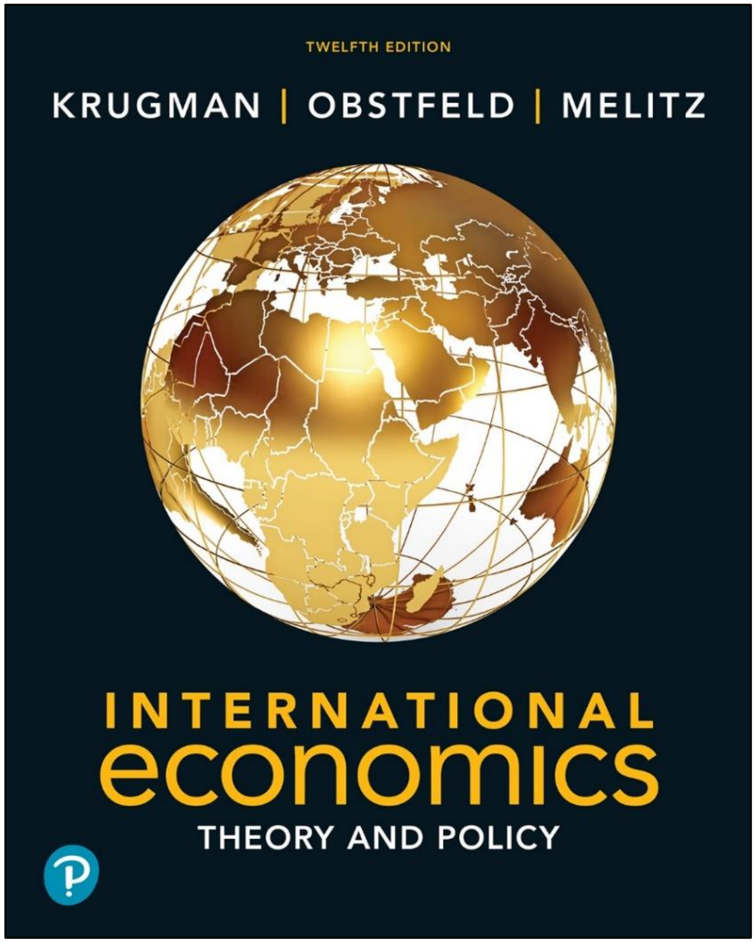
International Economics: Theory and Policy

Twelfth Edition



Chapter 9

The Instruments of Trade Policy

Measuring the Amount of Protection (1 of 3)

- The **effective rate of protection** measures how much protection a tariff (or other trade policy) provides.
  - It represents the change in **value** that firms in an industry add to the **production** process when trade policy changes, which depends on the change in prices the trade policy causes.
- Effective rates of protection often differ from tariff rates because tariffs affect sectors other than the protected sector, causing indirect effects on the prices and value added for the protected sector.

Measuring the Amount of Protection (2 of 3)

- **For example**, suppose that automobiles sell in world markets for $8,000, and they are made from factors of production worth $6,000.
  - The value added of the production process is $8,000 − $6,000.
- Suppose that a country puts a 25% tariff on imported autos so that home auto assembly firms can now charge up to $10,000 instead of $8,000.

Measuring the Amount of Protection (3 of 3)

- The **effective rate of protection** for home auto assembly firms is the **change in value added**:

$$\frac{(\$4{,}000 - \$2{,}000)}{\$2{,}000} = 100\%$$

- In this case, the effective rate of protection is greater than the tariff rate.

Costs and Benefits of Tariffs

- A tariff raises the price of a good in the importing country, so it hurts consumers and benefits producers there.
- In addition, the government gains tariff revenue.
- How to measure these costs and benefits???

Consumer and Producer Surplus (1 of 2)

- **Consumer surplus** measures the amount that consumers gain from purchases by computing the difference in the price actually paid from the maximum price they would be willing to pay for each unit consumed.
  - When price increases, the quantity demanded decreases as well as the consumer surplus.

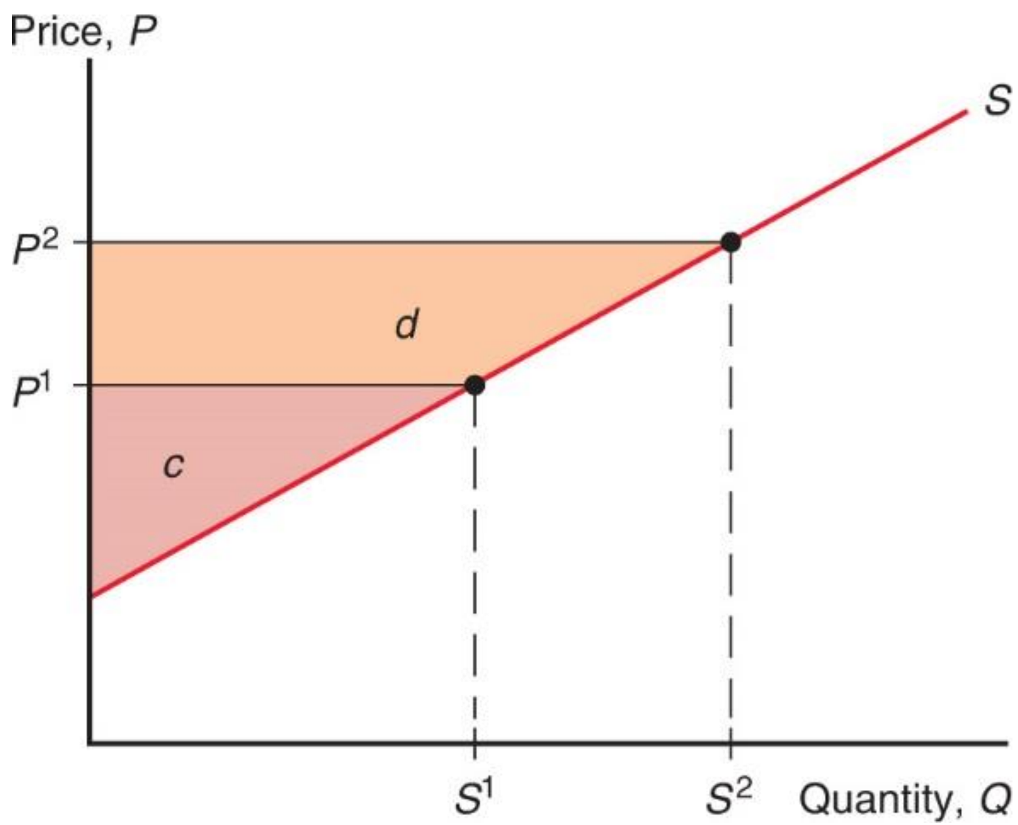
Geometry of Consumer Surplus

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

Consumer and Producer Surplus (2 of 2)

- **Producer surplus** measures the amount that producers gain from sales by computing the difference in the price received from the minimum price at which they would be willing to sell.
  - When price increases, the quantity supplied increases as well as the producer surplus.

Geometry of Producer Surplus



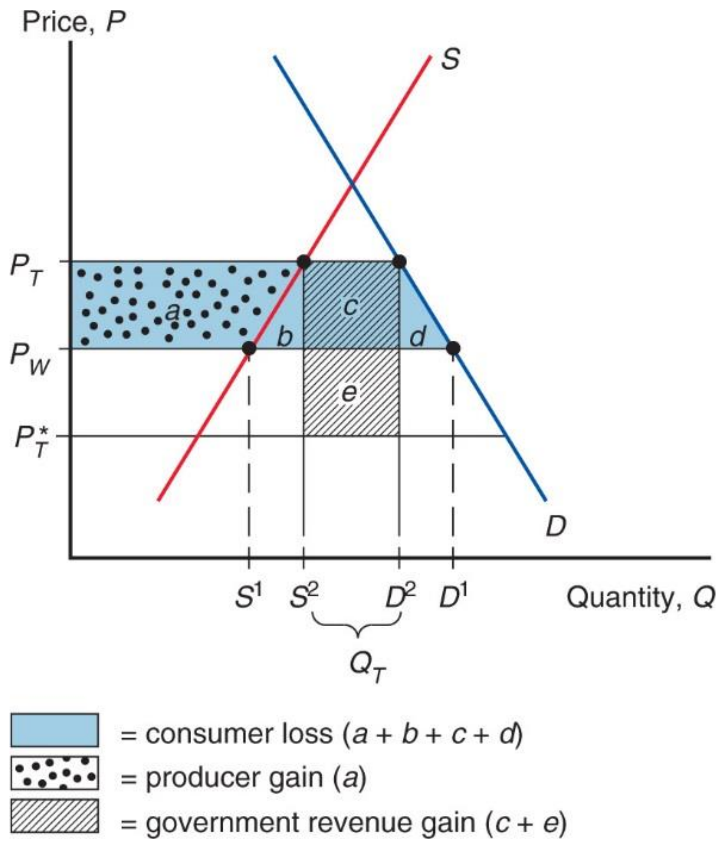
Producer surplus is equal to the area above the supply curve and below the price.

Measuring the Costs and Benefits of Tariffs (1 of 4)

- A tariff raises the price in the importing country:
  - consumer surplus decreases (consumers worse off)
  - producer surplus increases (producers better off).
  - the government collects tariff revenue equal to the tariff rate times the quantity of imports with the tariff.

$$tQ_T = \left(P_T - P_T^*\right)\left(D_2 - S_2\right)$$

Costs and Benefits of a Tariff for the Importing Country



- Change in welfare due to the tariff is $e - (b + d)$.

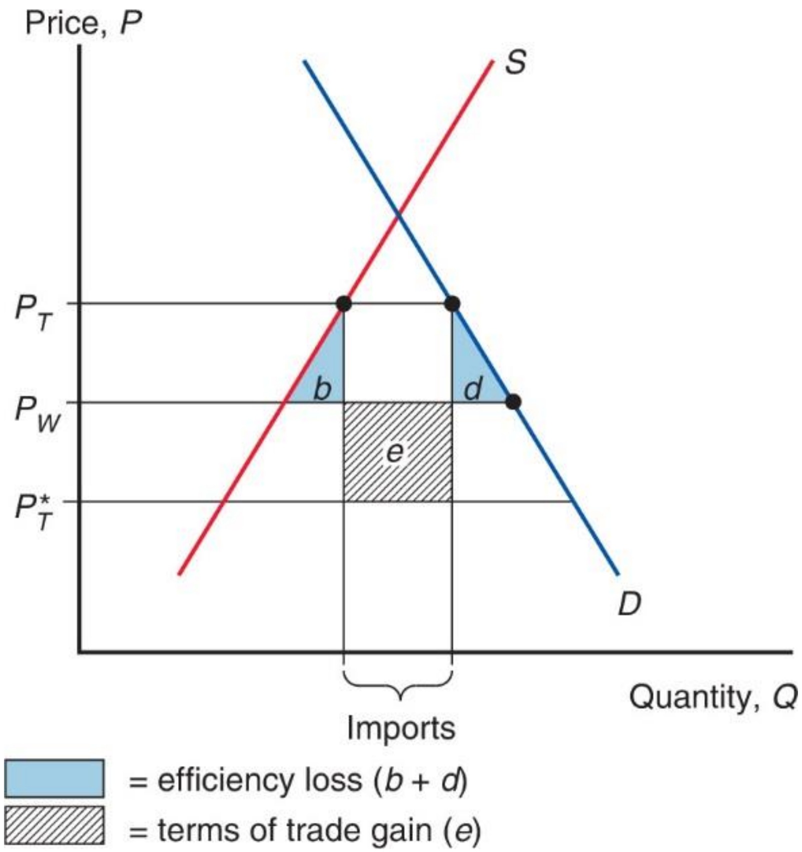
Measuring the Costs and Benefits of Tariffs (2 of 4)

- For a "large" country, whose imports and exports affect world prices, the welfare effect of a tariff is ambiguous.
- The triangles *b* and *d* represent the **efficiency loss**.
  - The tariff distorts production and consumption decisions: producers produce too much and consumers consume too little.
- The rectangle *e* represents the **terms of trade gain**.
  - The tariff lowers the Foreign price, allowing Home to buy its imports cheaper.

Measuring the Costs and Benefits of Tariffs (3 of 4)

- Part of **government revenue** (rectangle *e*) represents the terms of trade gain, and part (rectangle *c*) represents some of the loss in consumer surplus.
  – The government gains at the expense of **consumers** and **foreigners**.
- *If the terms of trade gain exceed the efficiency loss, then national welfare will increase under a tariff, at the expense of foreign countries.*

Net Welfare Effects of a Tariff



Measuring the Costs and Benefits of Tariffs (4 of 4)

- Tariffs can lead trading partners to **retaliate** with their own tariffs.
- Tariffs can be hard to remove, and large tariffs may induce producers to engage in wasteful activities to avoid paying tariffs.
  - Ford and Subaru install (then later remove) seats in vans and pickups trucks to avoid U.S. tariff on imports of light commercial trucks.

How Trump's trade wars hurt the U.S. farmers???

- https://www.youtube.com/watch?v=XeF51PPtpAw