Econ 200
Module 3
Lecture 8

UNIVERSITY *of* WASHINGTON

Outline

1. Review Gains from Trade
2. Welfare Effects of Trade
3. Trade Restrictions and Welfare

Readings: Chapter 17

Why trade? A Review

- Suppose that the U.S. and Bangladesh produce wheat and T-shirts.
- Their production capabilities are summarized as followed.

	Country	Wheat produced (billions)	T-shirts produced (billions)	Wheat consumed (billions)	T-shirts consumed (billions)
Without trade	United States	1	0.3	1	0.3
	Bangladesh	2	1	2	1
	Total	**3**	**1.3**	**3**	**1.3**
With trade	United States	3.5	0	1.1	0.8
	Bangladesh	0	2	2.4	1.2
	Total	**3.5**	**2**	**3.5**	**2**

- Without specialization and trade, they are able to produce on their PPF, but are still inefficiently using their resources.
- With specialization and trade, they coordinate their production and produce more goods.

The Roots of Comparative Advantage

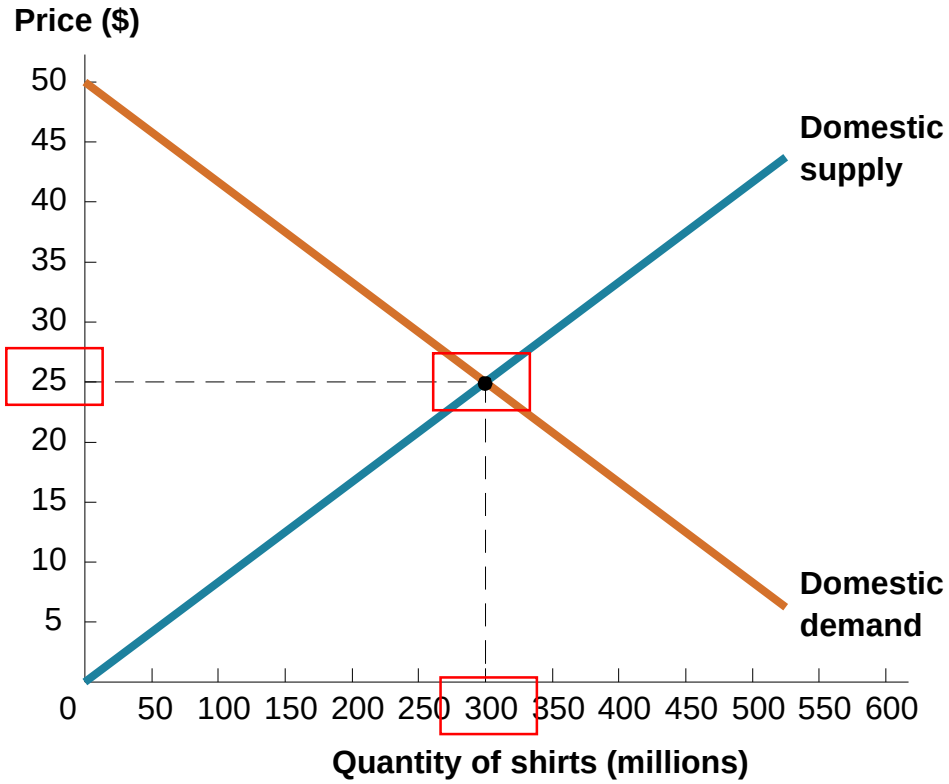
- Firms produce the goods and services in which they have a comparative advantage by responding to input and output prices and choosing to produce the good that earns the highest profits.

- The characteristics that affect the costs of production are:

Technology	Factor endowment
Natural resources and climate	

From Autarky to Free Trade

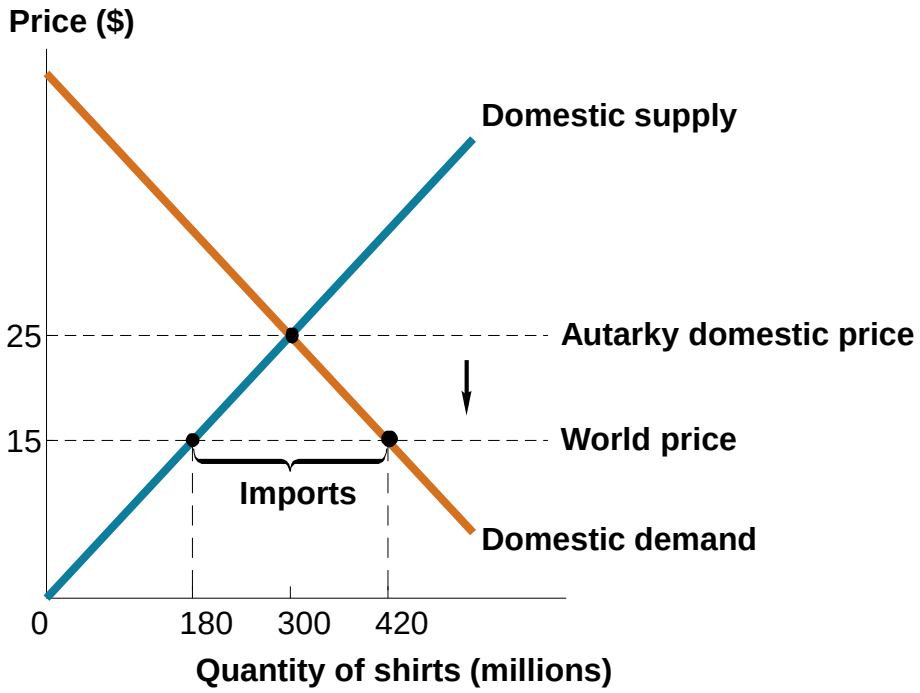
An economy that is self-contained and does not engage in trade (import or export goods or services) with outsiders is an *autarky*.



- *Imports* are goods and services that are produced in other countries and consumed domestically.
- *Exports* are goods and services that are produced domestically and consumed in other countries.

From Autarky to Free Trade

When an economy decides to engage in trade, the domestic price and quantity change.

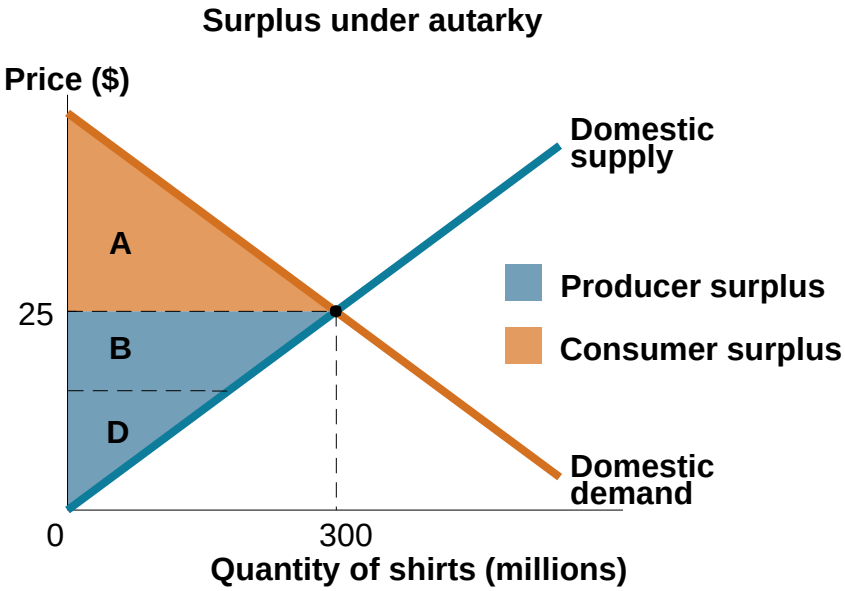


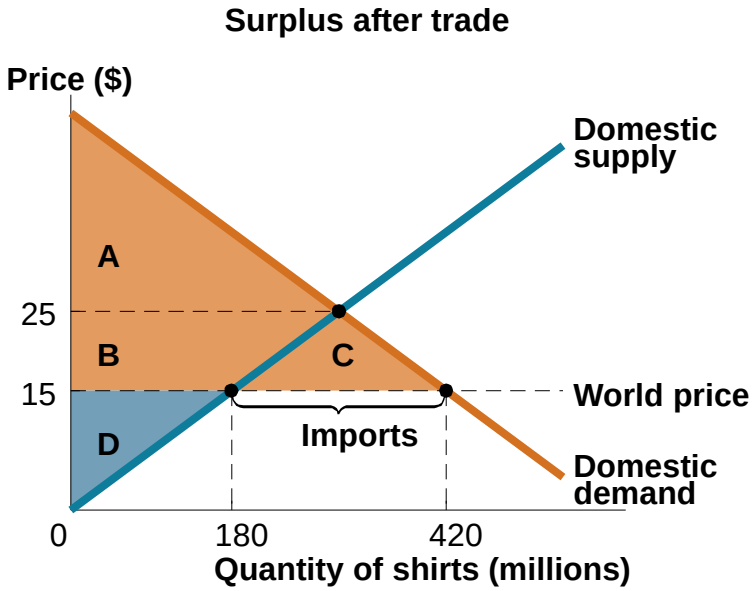
If the world price is less than autarky domestic price:

- Domestic price decreases to equal the world price.
- Excess demand occurs.

From Autarky to Free Trade

Consumer and producer surpluses are affected.





Under autarky:

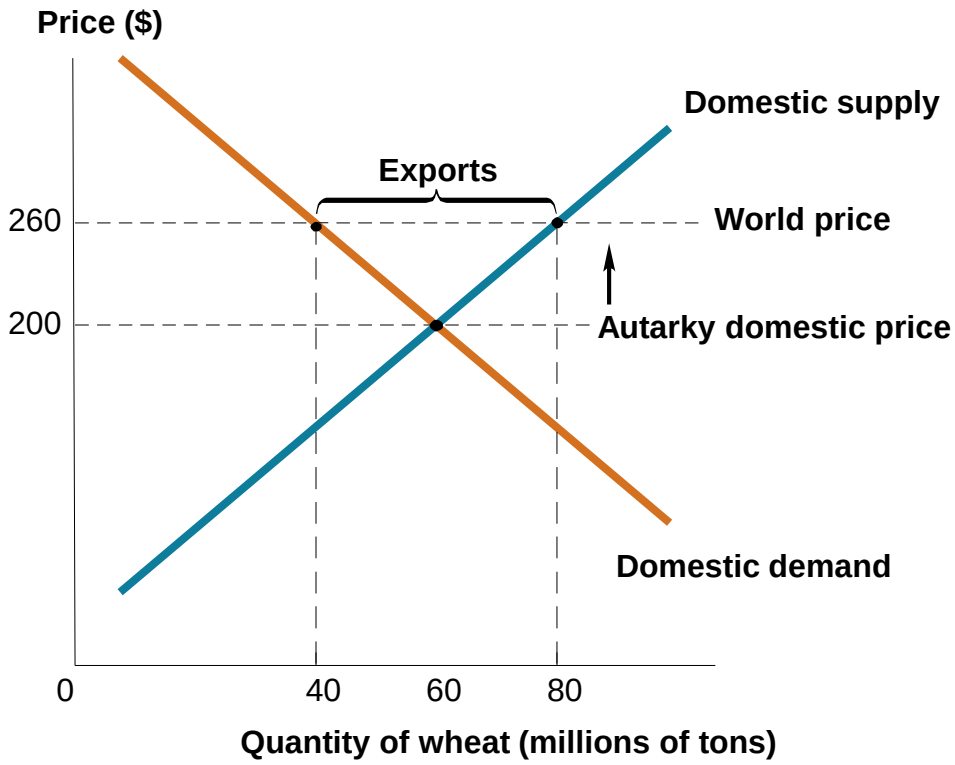
- Consumer surplus is A.
- Producer surplus is B + D.

After trade:

- Consumer surplus increases to A + B + C.
- Producer surplus decreases to D.
- Total surplus increases by C.

From Autarky to Free Trade

Producers export their goods and services when the world price is greater than the domestic price.

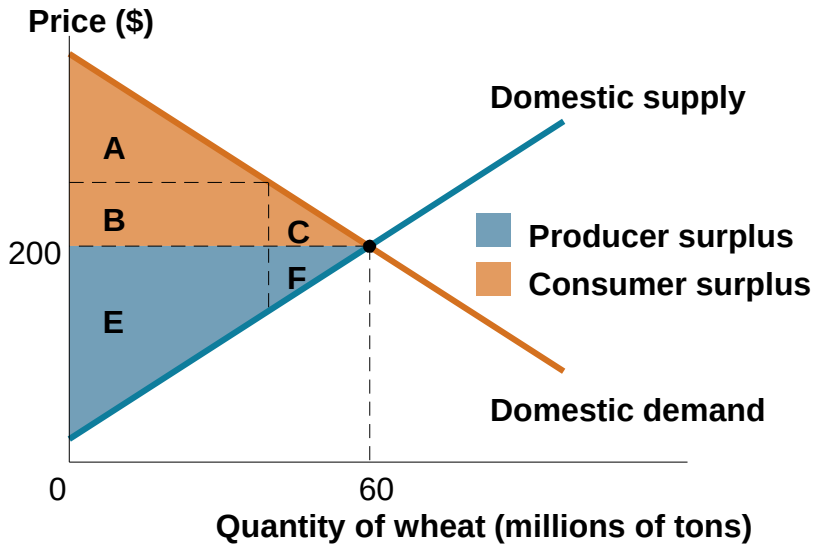


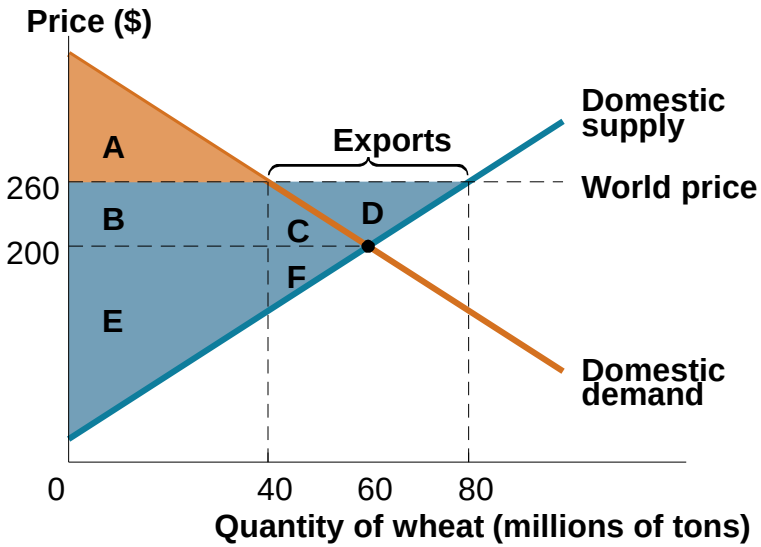
If the world price is greater than autarky domestic price:

- Domestic price increases to equal the world price.
- Excess supply occurs.

From Autarky to Free Trade

Consumer and producer surpluses are again affected.





Under autarky:

- Consumer surplus is A + B + C.
- Producer surplus is E + F.

After trade:

- Consumer surplus decreases to A.
- Producer surplus increases to B + C + D + E + F.
- Total surplus increases by D.

Why Don’t We See Complete Specialization?

In the real world, products are not generally produced by only one nation.

Reasons include:

- Not all goods and services can be traded internationally (medical services, for example).
- Production of many goods involves increasing opportunity costs (so small amounts of production are likely to take place in several countries)
- Tastes for products differ (cars, for example); countries might have comparative advantages in different sub-types of products.
- Trade agreements between countries that may stymie specialization.
- Differences in the natural resources, climate, and relative factor endowment of different areas.

International Labor and Capital

Although countries gain from trade liberalization, certain segments of the population lose out.

As a rule of thumb, free trade increases demand for factors of production that are domestically abundant, and it increases the supply of factors that are domestically scarce.

- Causes factor prices to converge across countries.
- Owners of domestically scarce factors of production lose due to increased competition, and owners of domestically abundant factors gain from increased demand.

Government Policies in Restriction of Trade

Tariffs:

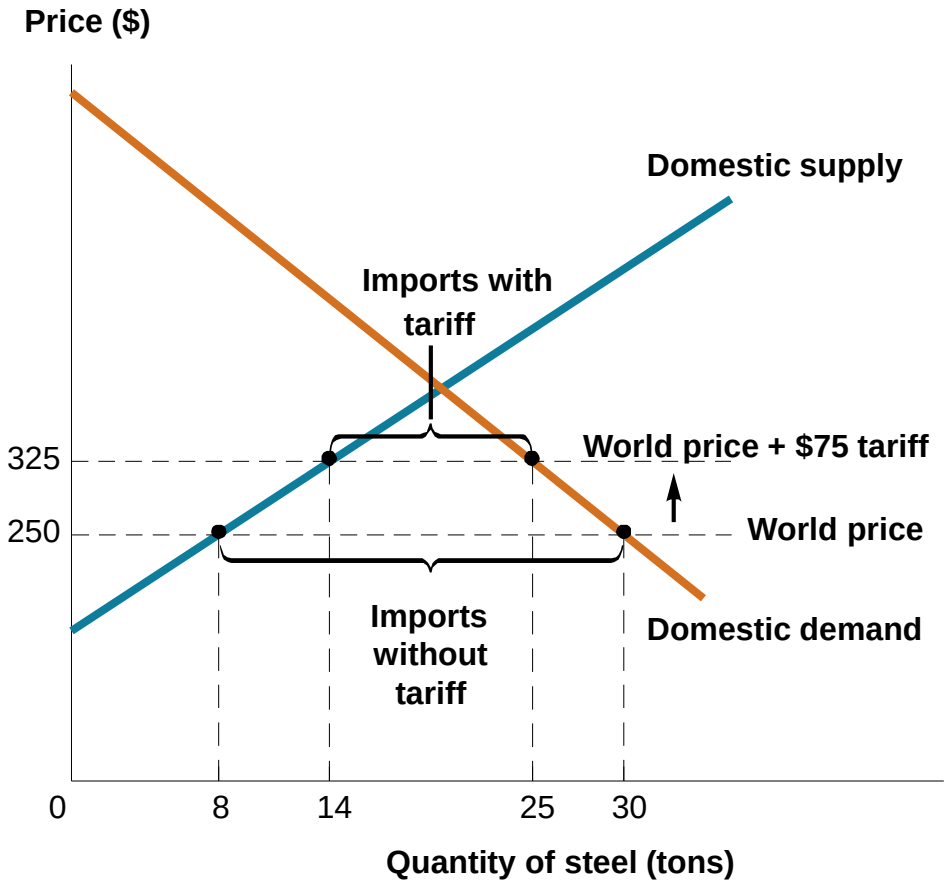
Taxes imposed by a government on goods imported into a country.

Quotas and Voluntary Export Restraints (VERs):

Limits imposed upon (quotas) or negotiated between (VERs) countries on the quantity of a good imported by one country from another.

Tariffs

- A *tariff* is a tax targeted at certain imports.
- The purpose is to reduce the quantity of imports to protect domestic producers.

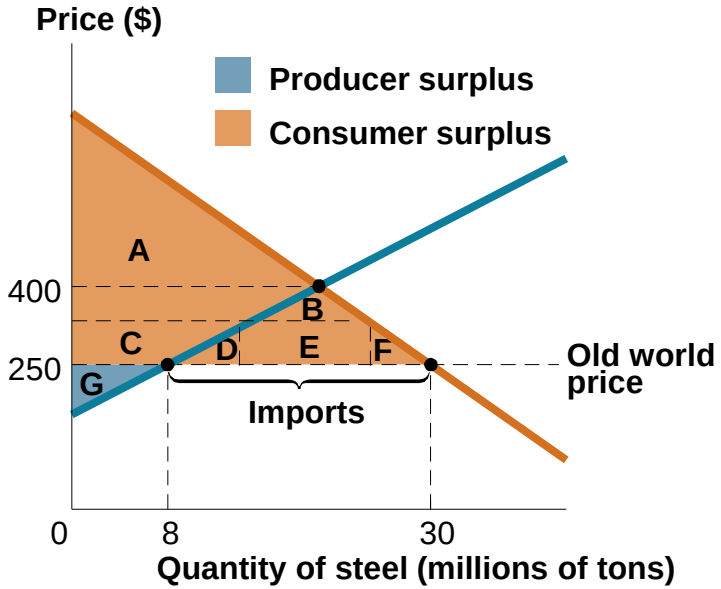


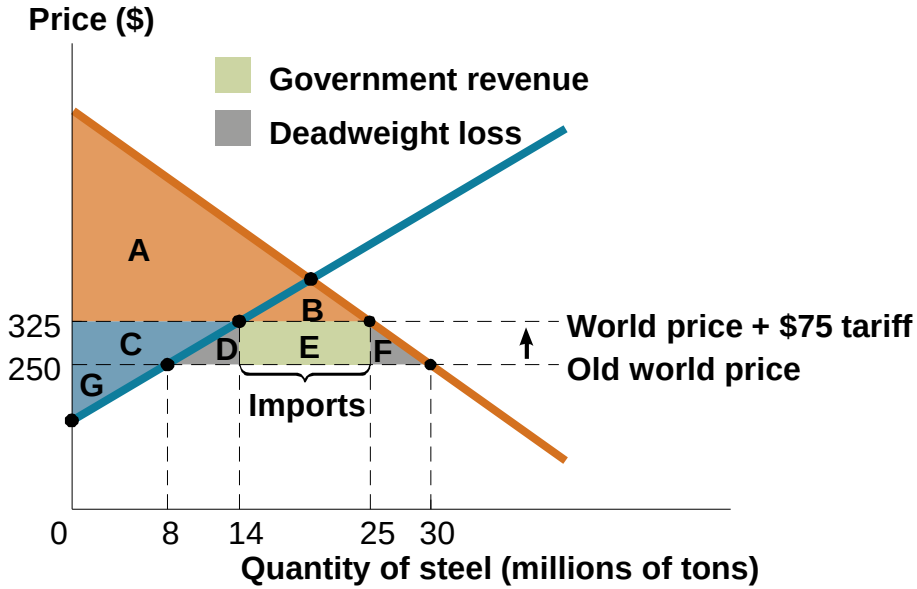
A tariff has two effects:

- Increases the world price for domestic consumers.
- Decreases the amount of shortage made up by imports.

Domestic Welfare Effects of a Tariff

There are substantial welfare effects of imposing a tariff.





Under trade without a tariff on imports:

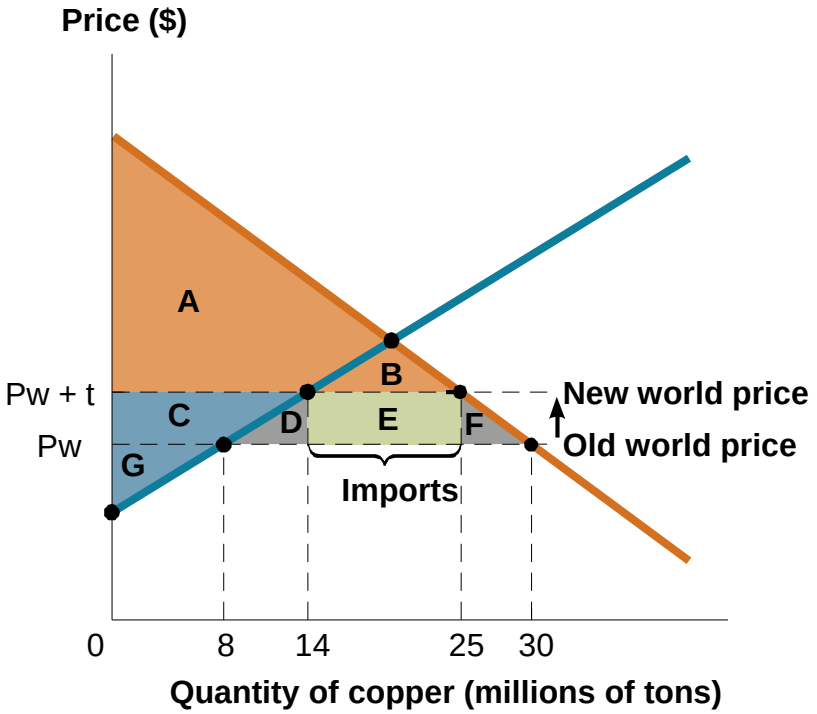
- Consumer surplus is A + B + C +D + E+ F.
- Producer surplus is G.

Under trade with a tariff on imports:

- Quantity of imports decreases.
- New world price is higher.
- Consumer surplus is A + B.
- Producer surplus is C + G.
- Government tax revenue is E.
- Deadweight loss is D + F.

Breakdown of Welfare Effects

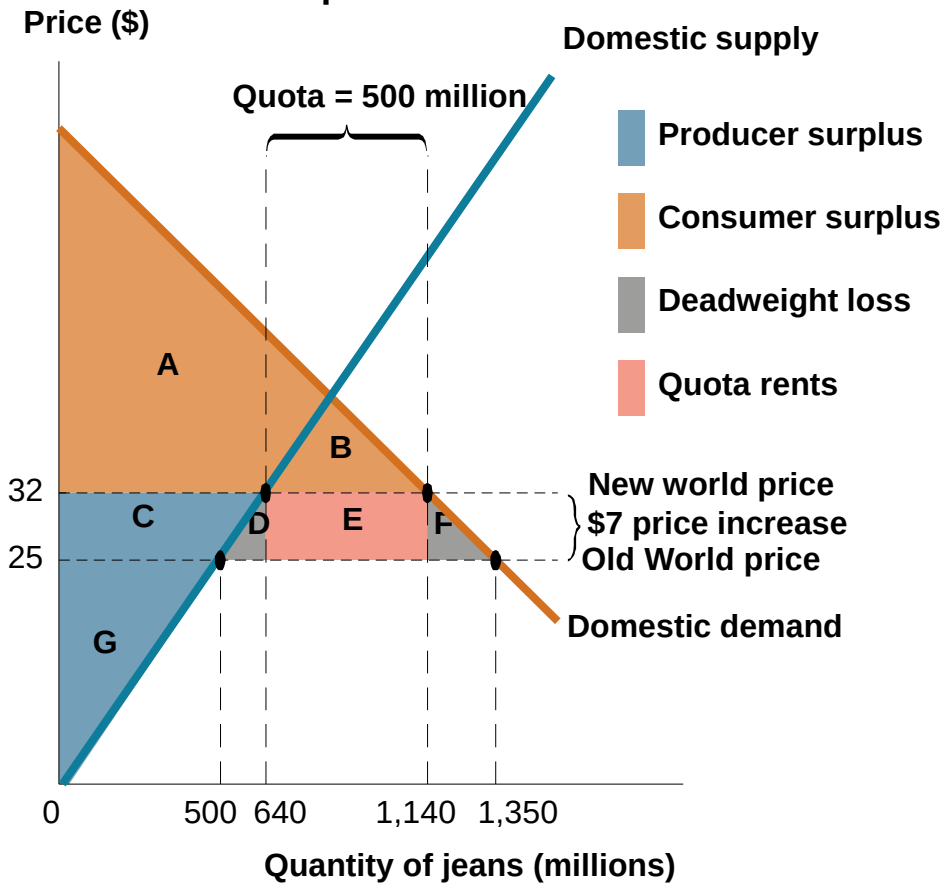
A tariff of $t per unit is imposed on foreign copper.



Measure	Before	After	Change
CS	A + B + C + D+ E + F	A + B	- (C + D + E + F)
PS	G	G + C	+C
Gov't Rev	-	E	+E
DWL	-	D + F	+(D + F)

Quotas

- A *quota* is a limit on the amount of a particular good that can be imported.
- *Quota rents* are profits earned by foreign firms or governments under a quota.

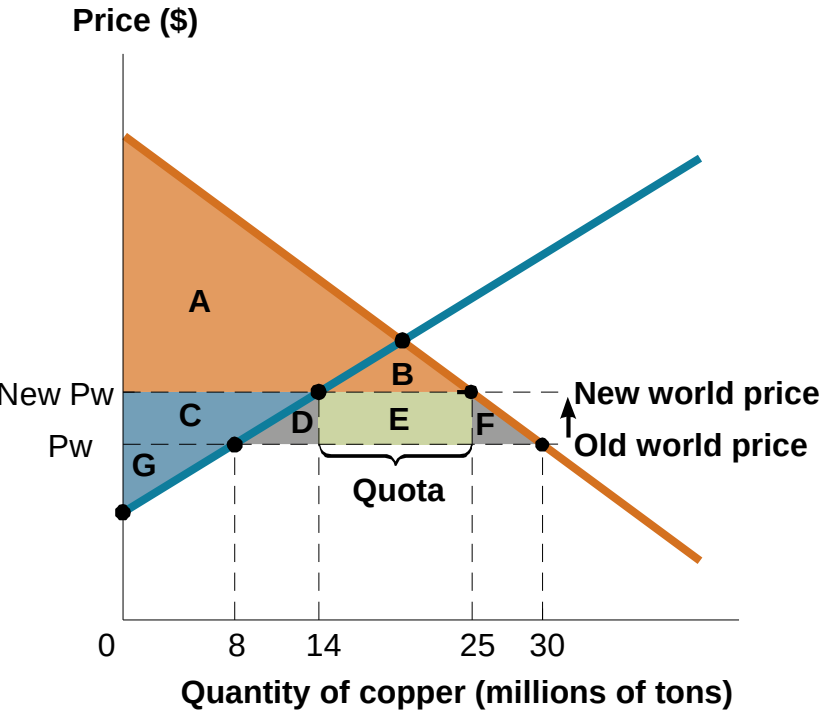


A quota has a few effects:

- Decreases imports.
- Increases import price.
- Increases producer surplus by C.
- Decreases consumer surplus by C + D + E + F.
- Foreign companies earn quota rents of E.
- Deadweight loss of D + F occurs.

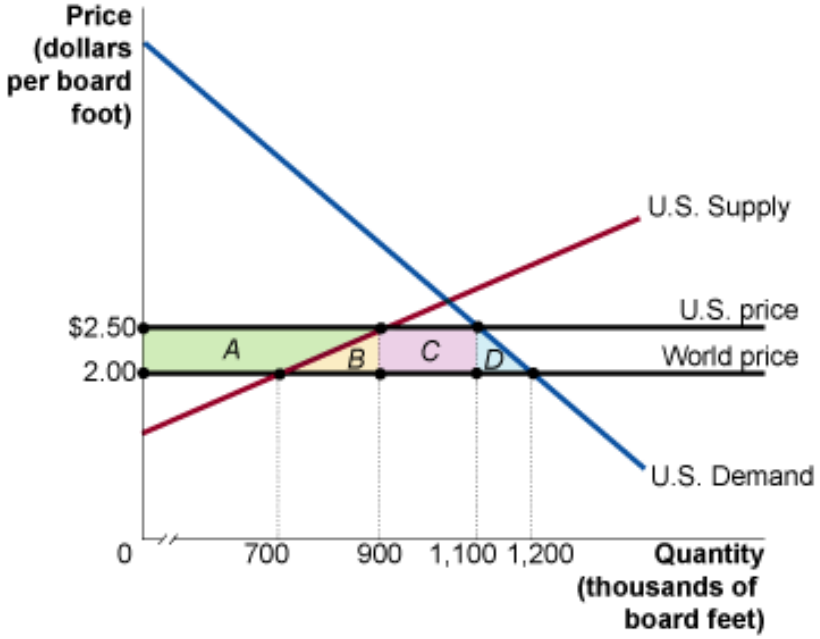
Summary of Welfare Effects

An import quota of 11 million tons is imposed on foreign producers of copper.



Measure	Before	After	Change
CS	A + B + C + D+ E + F	A + B	- (C + D + E + F)
PS	G	G + C	+C
Quota Rents	-	E	+E
DWL	-	D + F	+(D + F)

Refer to the figure below. The figure shows the impact of a tariff on lumber. What is the deadweight loss of the tariff? How much surplus do consumers lose?



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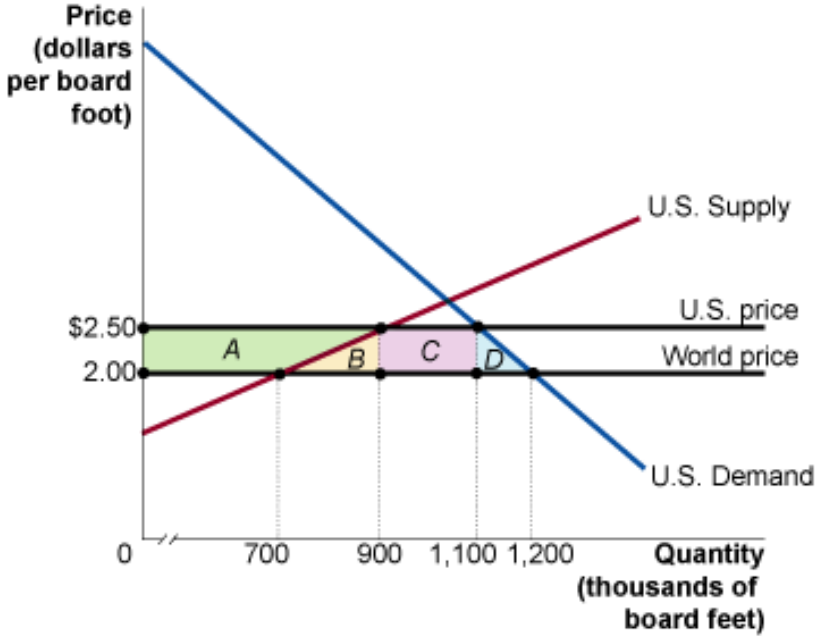

DWL= ½ (200)*($0.50)+ ½ (100)*($0.50) = $75/board foot x1000 board feet = $75,000

ΔCS=DWL+Revenue+ΔPS =$75,000+$0.50*200,000+ ($0.50*700,000+ ½*$0.50*200,000) = $575,000 (check my math??)

The U.S. demand for steel is given by P=1000-10Q where Q is in million of tons per year. The U.S. supply of steel is given by P=10Q.

The world price of steel is $400/ton. How much steel would the U.S. import at this price?

The U.S. demand for steel is given by P=1000-10Q where Q is in million of tons per year. The U.S. supply of steel is given by P=10Q.

The world price of steel is $400/ton. How much steel would the U.S. import at this price?

Qd: 400=1000-10Q

10Q=600

Q = 60 million tons

Qs: 400=10Q

Q=40 million tons

Imports = (60-40) million tons

= 20 million tons

The U.S. demand for steel is given by P=1000-10Q where Q is in million of tons per year. The U.S. supply of steel is given by P=10Q.

The world price of steel is $400/ton, but now the U.S. places an import quota of 20 million tons on steel. What will the new import price be?