

International Trade and Monetary Systems

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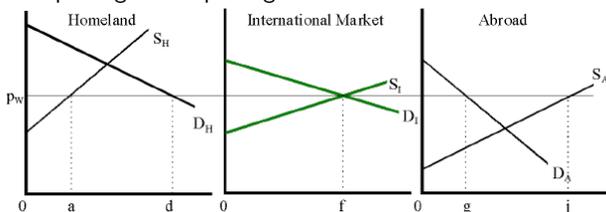
2015

1. Explain Raymond Vernon's product cycle model. Does it refute the principle of comparative advantage?
2. Why does innovative activity not move more readily across regions, countries, and continents?
3. Briefly describe the trend in income inequality over the past several centuries. Has the rapid international economic integration of the past two centuries made the world more equal in terms of income and wealth? Provide specific evidence to support your answer.
4. Use the general equilibrium model to explain Paul Samuelson's (2004) argument on how international trade can reduce a developed economy's income. Be sure to explain all the steps of his argument.

The Economics of a Tariff

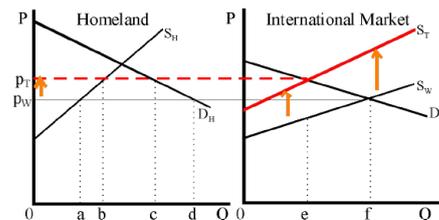
- ▶ A tariff is simply a tax on imports.
- ▶ An ad valorem tariff is a tax that is expressed as a percentage of the value of the import being taxed.
- ▶ A specific tariff is an import tax expressed as a fixed dollar amount per unit of imports.

the two-country partial equilibrium model of trade.
...the effects of a tariff on producers and consumers in both the exporting and importing countries.



The Economics of a Tariff

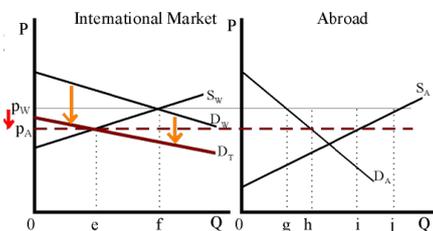
the effect of a tariff on the importing country



- ▶ An ad valorem tariff is illustrated in the International Market diagram as an increase in the supply curve of imports.
- ▶ The effective decrease in foreign supply raises Homeland's price and reduces imports.

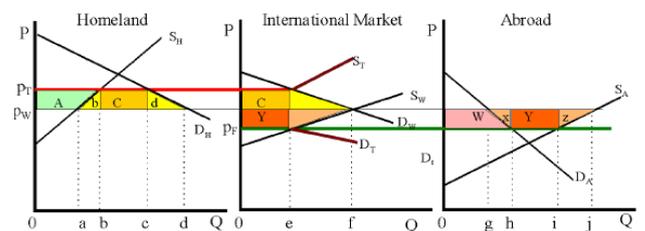
The Economics of a Tariff

the effect of a tariff on the exporting country



- ▶ In Abroad, the tariff looks like a decrease in foreign demand.
- ▶ As a result, the price in Abroad declines, and the volume of exports falls.

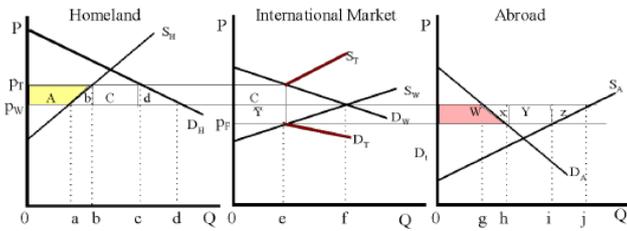
The Economics of a Tariff: The Welfare Effects in Homeland and Abroad



- ▶ Prices rise in Homeland and fall in Abroad.
- ▶ In the importing country, Homeland, consumers lose surplus equal to the areas A+B+C+D.
- ▶ In Abroad, the exporting country, producers lose surplus equal to the areas W+X+Y+Z.

The Economics of a Tariff: Welfare Effects

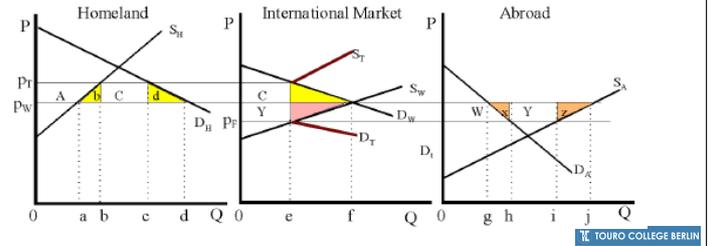
- ▶ The price rise in Homeland increases producer surplus by the area A.
- ▶ In Abroad, the fall in the price increases consumer surplus by the area W.



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The Economics of a Tariff: Welfare Effects

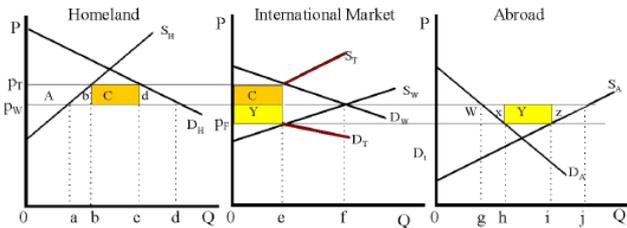
- ▶ Both countries suffer deadweight losses from the tariff, because trade shrinks and prices are distorted.
- ▶ Homeland loses b+d.
- ▶ Abroad loses x+z.
- ▶ The deadweight losses are equal to the similarly colored areas in the center diagram.



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The Economics of a Tariff: Welfare Effects

- ▶ Tariff revenue collected by Homeland's government is equal to areas C + Y.
- ▶ Some of this tariff revenue, area C, comes out of Homeland's consumer surplus.
- ▶ The rest of the tariff revenue comes out of Abroad's producer surplus, namely area Y.



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The two-country partial equilibrium model shows

...how a tariff on a specific product affects the markets for that product in both the exporting and the importing country.

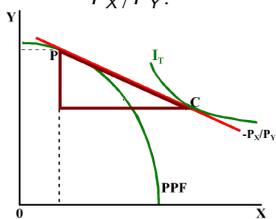
...that a tariff by one country on the other's exports causes:

- ▶ A transfer of welfare from domestic consumers to domestic producers in the importing country.
- ▶ A transfer of welfare from producers to consumers in the exporting country.
- ▶ A transfer of consumer surplus in the importing country to the importing country government in the form of tariff revenue.
- ▶ A transfer of producer surplus in the exporting country to the government of the importing country.
- ▶ Deadweight losses in both importing and exporting countries.

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The Tariff in a General Equilibrium Model

- ▶ The partial nature of the model does not permit it to show how other sectors of the export and import economies are affected by the tariff.
- We need a general equilibrium model.
- ▶ We will use the **small country** general equilibrium model to keep things simple.
- ▶ Suppose that a small country faces relative international prices of products X and Y given by the price line $-P_X/P_Y$.

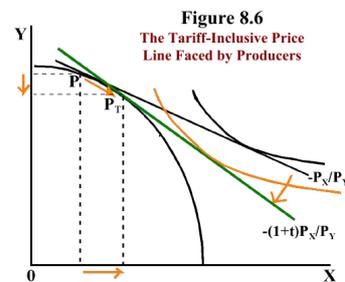


- ▶ Production thus occurs at point P and consumption at point C.
- ▶ Trade is given by the trade triangle, and the economy attains the welfare level represented by the indifference curve.

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A Tariff in the General Equilibrium Model

An ad valorem tariff of $t\%$ on the import good X will raise the domestic price of X from the world price of P_X to $(1+t)P_X$.

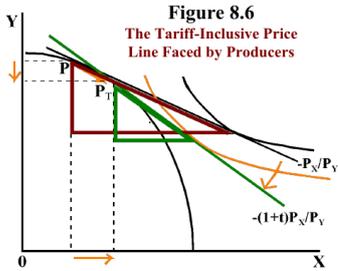


- ▶ The world price line slope of $-(P_X/P_Y)$ increases to a tariff-distorted price line with a slope of $-[(1+t)P_X/P_Y]$.
- ▶ Production shifts from P to P_T , increasing X production and decreasing Y production.
- ▶ Welfare declines; only lower indifference curves are now attainable.

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A Tariff in the General Equilibrium Model

- ▶ A tariff on imports of good X not only expands X industry, but it also contracts output of Y and reduces exports.
- ▶ The X industry's increased demand for resources raises the cost of resources for the Y industry, reducing that industry's ability to produce and export.



- ▶ The result that protection of the import-competing industry reduces exports is known as the **Lerner Symmetry Theorem**.
- ▶ That is, a restraint on imports also effectively acts as a restraint on exports.

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Economics of a Tariff

- ▶ The two-country partial equilibrium model shows that a tariff on a specific product raises its price in the importing country and lowers its price in the exporting country.
- ▶ These price changes cause a redistribution of welfare that, in part, reverses the gains from trade.
- ▶ There is also a gain in government revenue in the importing country, which is effectively paid for by the importing country's consumers and the exporting country's producers.
- ▶ The general equilibrium model provides further insights, namely that a tariff reduces both imports and exports; this is known as the Lerner Symmetry theorem.

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Quantitative Trade Restrictions: Quotas

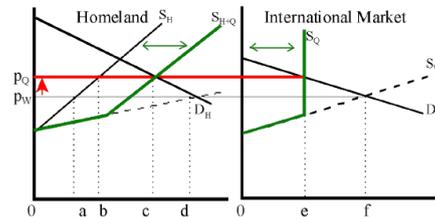
- ▶ A tariff reduces international trade and raises prices in the import market, thus protecting domestic producers.
- ▶ Imports can also be reduced by simply limiting the quantity of goods or services permitted to cross the border.
- ▶ Such quantitative restrictions are commonly called import quotas.
- ▶ By reducing imports, a quota also causes the price of imports to rise in the importing economy, thus protecting domestic producers.

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The Economics of a Quota

in the partial equilibrium model of imports and exports

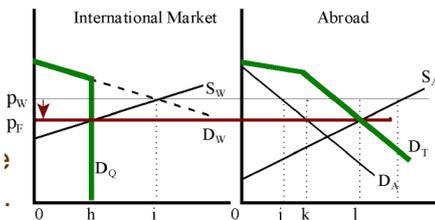
- ▶ Suppose the quota is set at half the free trade quantity of imports.
- ▶ From Homeland, the foreign supply curve looks like the kinked curve in the International Market on the right.
- ▶ With restricted imports, the Homeland price rises.



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The Economics of a Quota

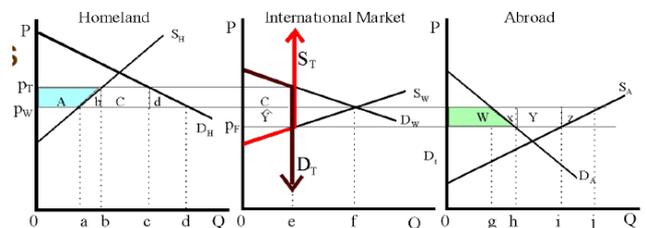
- ▶ From Abroad's perspective, the quota creates a kinked foreign demand curve in the International Market.
- ▶ The domestic price in Abroad falls as the quantity exported is reduced to the quota level.



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The Economics of a Quota

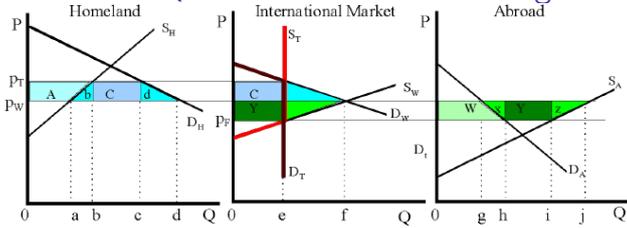
The Full Welfare Effects in Homeland and Abroad



- ▶ By raising the price in Homeland, the quota increases Homeland producers' surplus by the area A.
- ▶ In Abroad, the price falls and consumers gain surplus equal to the area W.

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Economics of Quota: The Full Welfare Effects



- ▶ The price rise in Homeland, the importing country, reduces consumer surplus by the areas $A+b+C+d$.
- ▶ In Abroad, the price decline there reduces producer surplus by the areas $W+x+Y+z$.
- ▶ The quota distorts prices and changes quantities, causing deadweight losses.
- ▶ In Homeland, the deadweight losses are $b+d$.
- ▶ In Abroad, deadweight losses are $x+z$.

Economics of Quota: The Full Welfare Effects

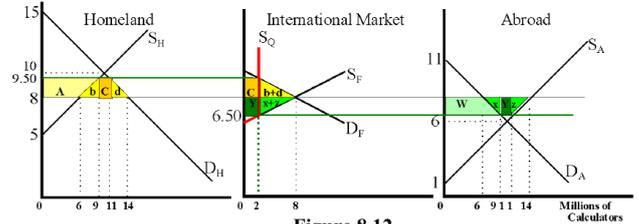


Figure 8.12
The Welfare Effects of a Quota

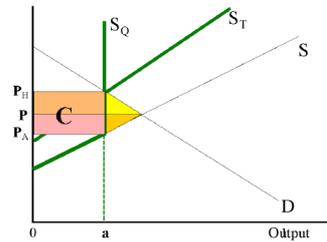
- ▶ A quota generates quota rent, not government revenue.
- ▶ Quota rent comes out of consumer surplus (area C) in the importing country and producer surplus (area Y) in the exporting country.

The Precise Welfare Effects of an Import Quota Depend on Who Gets the Rent

- ▶ Who gains the quota rent depends on who collects the difference between the higher price in Homeland and the lower price in Abroad.
- ▶ If it is importers that purchase overseas at lowered world prices and sell domestically at the higher prices, then Homeland gains the quota rent and reduces its overall welfare loss from the imposing of the quota.

The Equivalence of Tariffs and Quotas

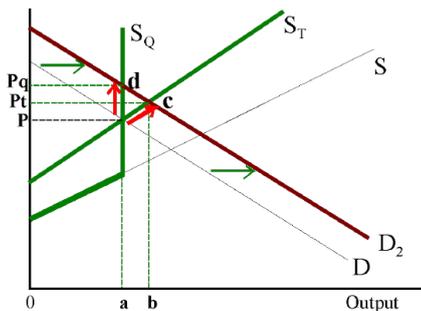
- ▶ There is an equivalent tariff, for any given quota, and vice versa.
- ▶ The areas representing transfers from one group to another and deadweight losses seem to be the same for equivalent tariffs and quotas.



- ▶ The only exception is the area C, which represents tariff revenue in the case of the tariff, and quota rent in the case of the quota.

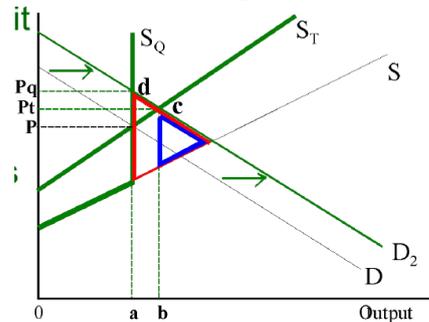
Some Differences Between Tariffs and Quotas

- ▶ If demand shifts, tariffs and quotas that were equivalent will have different welfare effects.
- ▶ Under a tariff, an increase in demand creates a new market equilibrium at c.
- ▶ Under a quota, an increase in demand creates a new market equilibrium at d.



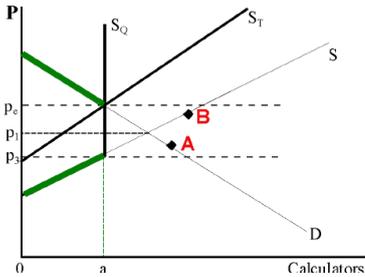
Some Differences Between Tariffs and Quotas

- ▶ With a tariff, the price rises to P_t , with a quota to P_q .
- ▶ With a tariff, the quantity imported rises from a to b, under a quota imports are unchanged.
- ▶ Deadweight loss is also less under a tariff, compare the smaller blue triangle with the quota's red triangle.



Some Differences Between Tariffs and Quotas

- ▶ A quota may not ration rent opportunities efficiently.
- ▶ Consumers and producers along the green portions of the demand and supply curves should participate in the restricted trade.
- ▶ A quota could result in people at point A below the free trade price P_f getting import permits.



- ▶ Import permits may be denied to the lowest-cost suppliers and instead given to high-cost producers at point B.

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Who Imports Under a Quota?

- ▶ In the case of a tariff, the question of who gets to import is easy to answer: Whoever pays the tariff, can import.
- ▶ In the case of a binding quota, who gets selected to import and who is prohibited from importing?
- ▶ Some type of rationing scheme must be devised.
- ▶ Common rationing schemes:
 - ▶ First come, first served.
 - ▶ Random drawing.
 - ▶ Proportional to previous years' imports.
 - ▶ Various economic, social, political, and other criteria.
 - ▶ Auction.
 - ▶ Arbitrary political decisions.
 - ▶ Lobbying (bribery).

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Rent Seeking

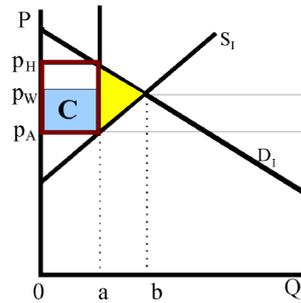
- ▶ Rent seeking activity is the intentional and planned use of society's scarce and costly resources in order to shift income and wealth from others to yourself.
- ▶ Rent seeking may try to distort an otherwise efficient economic process.
- ▶ Or, rent seeking may be carried out in order to undo or mitigate the effects of someone else's successful rent seeking at your expense.
- ▶ Overall, rent seeking activities subtract from economic output because real resources are used to affect a real transfer from one person or group to another.

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The Costs of Rent Seeking

How Much is a Quota Worth?

The costs of the resources used in rent seeking must be added to other costs of protection.

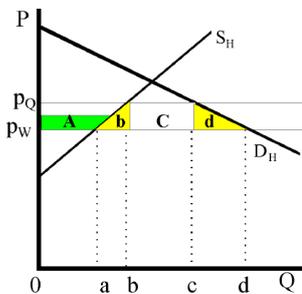


- ▶ Potential importers would be willing to spend some of the potential quota rent (the dark red box) to lobby policymakers to get the rent.
- ▶ If lobbying activities consume resources equal in value to the light blue area C, then the total costs to the world economy of the quota of bc would be equal to the deadweight losses (the yellow triangle a) plus C.

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The Costs of Rent Seeking

Potential importers are not the only ones who engage in rent seeking. Consumers may wish to organize to protect themselves against rent-seeking producers.



- ▶ Consumers would be willing to spend up to the lost consumer surplus (A+b+C+d) to avoid the quota altogether.
- ▶ If lobbying costs consume half of the area A, then the green shaded area must also be added to the costs of protection.

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Dynamic Rent Seeking: Obstructing Creative Destruction

- ▶ For the process of creative destruction to work, there must be destruction as well as creation.
- ▶ In a Schumpeterian environment of innovative competition, lobbying for protection against foreign competition may be motivated not by producers' desire to increase producer surplus, but by the desire to slow the process of creative destruction and extend the period during which domestic innovators can reap profits.
- ▶ If such dynamic rent is successful, technological progress will slow, and welfare gains from economic growth will be lost.

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Dynamic Rent Seeking: Obstructing Creative Destruction

- ▶ The costs of dynamic rent seeking activity include the resources that are spent on obstructive activity rather than on the production of welfare-enhancing output.
- ▶ There are also the opportunity costs of lost future economic growth if the obstruction of competitive innovation is successful.
- ▶ Given the power of compounding, the opportunity cost of obstructing innovative activity can be enormous because the power of compounding magnifies even small changes in growth rates into large welfare changes.

Dynamic Protectionism

The welfare costs of obstructive activity consist of:

- ▶ The resources that are spent on obstructive activity rather than production.
- ▶ The lost future economic growth if the obstructive activity is successful.

Clearly, the economic cost of obstructing innovative activity can be enormous when you consider how the power of compounding magnifies even small changes in growth rates into large welfare changes.