COMMERCIAL POLICY

The major conclusion from the study of our trade models is that, as a whole, trade is beneficial. Thus the role of government with respect to international trade would be *laissez faire*. Free trade results in higher social welfare, stimulates domestic industries to remain competitive, provides opportunities for technological advances and increases national income.

If all this is true, then why are there such strong political pressures to apply protectionist measures? The answer, most often given requires an analysis of how the benefits and costs of protectionist measures are distributed. In sum, protectionist measures raise the price that consumers pay for imports, thus allowing domestic industry to have higher costs than foreign competitors and yet remain competitive.

The costs of protectionist measures, as we shall see, mainly affect consumers. While these costs are on the whole very high, they tend to be highly diffused such that the individual consumer does not have an onerous burden. For example, one of the highest levels of protection on imported goods in the US is on apparel, at approximately 20%. This means that clothing costs about 20% more than it would with free trade. But, maybe with the exception of college students, the portion of income devoted to clothing expenditures is not particularly high. Consequently, most consumers would not be willing to devote resources to persuade Congress to lift these protectionist measures. Also, consumers would not cast their ballots in electing representatives based on the single issue of removing the tariff.

Other costs of protectionism affect export industries. By maintaining protectionist measures, the US is not credible in promoting the reduction of identical measures of our trading partners. This in turn reduces the demand for US exports. The consequence of this reduced demand is a decrease in employment in these industries. With a movement towards free trade, jobs would be created as a result of increased exports.

The benefits of protectionist measures fall exclusively on the import-competing industry. Here the benefits, unlike the costs, are highly concentrated. Therefore, the people involved in these industries have a strong incentive in maintaining these measures. If protectionist measures are removed, then less than competitive firms will suffer decreased demand for their products which will result in job losses. The familiar slogan to *Buy American to Save American Jobs* is the rallying cry for these industries. Consequently, resources are devoted to influencing Congress to restrict imports. An individual whose employment is in jeopardy if protectionist measures are
lifted will be more inclined to become a single-issue voter, voting for politicians based only on their protectionist positions.

WELFARE EFFECTS OF TARIFFS AND QUOTAS

We use the concepts of producer and consumer surplus to evaluate the welfare effects of government intervention in markets. This is also the case for international trade. Recall that consumer surplus is that portion of societal profit which accrues to consumers. It represents the difference between the value consumers place on goods and what they pay for them. Producer surplus is the societal profit obtained by domestic producers. It represents the difference between what the firm receives from the sales of their products and the opportunity costs of the resources which produced the goods. Imposing protectionist measures on imports will have an effect on both consumer and producer surplus.

We restricted our previous discussions of producer and consumer surplus to domestic autarkic markets. The economic agents, consumers and producers, were not engaged in trade. The market equilibria in these situations are the familiar quantity demanded (qd) equaling quantity supplied (qs) at the autarkic equilibrium price. The concept of market equilibrium is the same with international trade but now has to account for imports or exports. Referring to Figure 1, autarkic equilibrium price is given as Pa at the intersection of demand and supply. The autarkic equilibrium quantity is qa. Now, under conditions of international trade, the world price, P*, must be different than the autarkic price Pa. Supposing that Pa is greater than P*, this country would be an importer of the good. In essence, if the cost of importing the good is smaller than producing the good, then the good will be imported. Market equilibrium would then be defined...
where domestic quantity demanded \((qd)\) would be equal to domestic quantity supplied plus the level of imports at the world\(\neq\) price.

Import:
\[ qs(\text{domestic}) + \text{imports} = qd (\text{domestic}) \]

Imports therefore expand until an equilibrium is reached and are equal to the difference between \(qd\) and \(qs\), namely \(qd - qs\).

If \(P^*\) is greater than \(Pa\), the country would be an exporter of the good (not shown in Figure 1). Equilibrium would then be defined as domestic quantity supplied equaling the sum of quantity demanded plus exports.

Export:
\[ qs(\text{domestic}) = qd (\text{domestic}) + \text{exports} \]

Exports expand until an equilibrium is reached and are equal to the difference between \(qs\) and \(qd\).

The profits of this market to consumers and producers can be measured in terms of consumer and producer surpluses. The benefits and costs from the change from autarkic equilibrium to free trade can also be measured in terms of changes to consumer and producer surpluses. In autarkic equilibrium consumers obtain surplus given by the amount of area A (in Figure 1), the area below demand and above \(Pa\). Producer surplus, in autarky, is the sum of areas B and E, the area below \(Pa\) and above supply. If this country opens up to free trade, consumer surplus increases, whereas producer surplus falls. Consumer surplus with trade is now the sum of areas A, B, C and D, the area below demand and above \(P^*\). Producers lose surplus by the amount of area B, with producer surplus equaling area E, the area below \(P^*\) and above supply. Clearly, consumers are the winners and domestic producers are the losers. Did society on a whole gain? The gains to the consumer are greater than the losses to producers. Area B, formerly producer surplus, is transferred to the consumer. But the consumer also gains areas C and D, thus winners win more than losers lose. Of course, this may be very little consolation to the losers.

Tariffs

We start our discussion of tariffs by making an assumption called a Small country assumption. Under these conditions, a country is so small that its buying (or selling) behavior has no effect on
the world\$ price. In economic terminology, the country is a price taker. Therefore, we can treat the world\$ price as a constant since restricting imports will not change the world\$ price for the good. In order to explain the effects of a tariff, we need to examine the changes in consumer and producer surpluses before and after the imposition of the tariff. Referring to Figure 2, with free trade consumer surplus is the sum of areas A, B, C, D and E, the area under the demand curve above P*. Producer surplus is area F, the area above supply and below P*.

![Figure 2](image)

The tariff, a tax on imports, raises the domestic price of the good by the amount of the world\$ price plus the size of the tariff. In other words, the domestic price with the tariff is P*+t. The changes in consumer and producer surpluses, are highly dependent upon this price change.

The welfare effects of a tariff are illustrated in Figure 2. For consumers, this is determined by the decrease in consumer surplus as a result of the tariff. The increase in the domestic price from P* to P* + t causes consumer surplus to decrease by an amount of the sum of areas B, C, D and E. Area B is a transfer of consumer surplus to producers. These gains to the producer do not increase society\$ welfare since they represent an identical loss to consumers.

Area D is equal to the government\$ revenue from collecting import taxes on the product. The level of imports with the tariff have decreased as intended by the tariff. Imports have shrunk to the difference be quantity demanded and quantity supplied at the new higher price of P* + t, or in Figure 2, q_{dt} less q_{st}. Tariff revenue earned by the government is equal to the tariff rate (t), the vertical height between P* + t and P*, multiplied by the amount imported in the presence of the tariff (q_{dt} - q_{st}). The government\$ tariff revenue then is \{t x (q_{dt} - q_{st})\}, or area D. Areas C and E represent lost consumer surplus which is not captured by another group. The sum of these two are the deadweight loss or societal cost as a result of the tariff.
Table 1 presents an analysis of the cost to consumers of protecting jobs in different import-competing industries. The last column is most interesting. It represents the cost to society in terms of deadweight loss, of saving a job in each of these industries. In almost all cases it would be cheaper to provide job losers with an early retirement at full pay than to enact tariffs.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>B+C+D+E</th>
<th>B</th>
<th>D</th>
<th>C+E</th>
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<tbody>
<tr>
<td></td>
<td>COST TO CONSUMER MILLIONS $</td>
<td>GAIN TO PRODUCER</td>
<td>TARIFF REVENUE</td>
<td>DWL</td>
</tr>
<tr>
<td>RUBBER FOOTWEAR</td>
<td>272.2</td>
<td>44.1</td>
<td>28.5</td>
<td>184</td>
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<td>54.6</td>
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<td>215.9</td>
</tr>
<tr>
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<td>90</td>
<td>10</td>
<td>11.6</td>
<td>70</td>
</tr>
<tr>
<td>LUGGAGE</td>
<td>186.3</td>
<td>36.4</td>
<td>21</td>
<td>113.5</td>
</tr>
<tr>
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<td>25.7</td>
<td>15.5</td>
<td>83</td>
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<tr>
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<td>185.8</td>
<td>77.2</td>
<td>14.8</td>
<td>93.5</td>
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<tr>
<td>RESINS</td>
<td>93.1</td>
<td>45.1</td>
<td>5.8</td>
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<td>50.3</td>
<td>3.9</td>
<td>6.9</td>
<td>42.5</td>
</tr>
</tbody>
</table>

Large Country Analysis

Now we turn our attention to the situation where the importing country's demand for the good is relatively large in comparison to the world's supply. In this case, the country's buying and selling behavior would have an effect on the world's price. The world's supply curve would be upward sloping, reflecting that a change in domestic demand would influence the world's price of the good. Unlike the small country analysis where world price was a given constant, an increase in the domestic demand would lead to an increase in world price. In this case, the imposition of a tariff may not necessarily lead to reduced social welfare. By reducing the quantity imported a large country may be able to reduce the world's price by reducing what it pays for the good.

Society's cost of a tariff is now partly mitigated by shifting the burden of the tariff onto foreign exporters. If the amount of tax paid by foreigners exceeds the sum of deadweight loss, then it is conceivable that the imposition of the tariff will benefit society. Of course the major presumption is that the country's trade partners will in no way retaliate and impose protectionist measures against the country's exports. Conceptually, there is an optimal tariff, but the assumptions required make its reality highly unlikely.
Arguments in Favor of Tariffs

The most prolific argument in favor of tariffs is that they save jobs. This is misleading. While it is true that jobs in import-competing industries may be saved, it is usually at the expense of jobs in other areas of the economy, mainly the export sector. It may be that the number of jobs lost in the import-competing sector is higher than those gained in the export sector. However, at least in the US, the import-competing jobs tend to be of low value, whereas those in export industries are of higher value and usually pay higher wages. Of course none of this discussion takes into account the cost of the tariff to consumers.

Another rationale for tariffs is national security. It is important that, in the case of hostilities, the military has access to necessary equipment. This is not primarily an economic argument.

Possibly, the only argument with economic merit is the infant industry argument. The rationale behind this reasoning is that as an industry develops it could be initially at a disadvantage relative to more mature foreign competitors. As the industry matures, it learns how to be more efficient, which over time lowers its costs and thus the price at which it is competitive. Figure 3 illustrates this.

![Figure 3](image)

During its infancy stage, average costs are higher than the international price, $P^*$, in Figure 3. Survival for this industry may require a level of protection allowing domestic firms to compete. However as this industry climbs the learning curve, its average costs fall and eventually the firm becomes competitive without the tariff. At this point, protection is no longer required. The main problem is that once in place tariffs are not easily removed.

This argument can also apply to industries where a sudden reversal occurs. A temporary tariff can be justified on the grounds that the domestic industry needs time to retrench in order to become

Commercial Policy - page 6
commercial once again. Examples of this include Harley Davidson motorcycles and the US automotive industry.

Non-Tariff Barriers

With the establishment of GATT and the ensuing reductions in the use of tariffs, countries have had to rely on other means of protection against imports. These other means are termed non-tariff barriers. They include:

- quantity restrictions placed on imports, such as
  - outright quantitative restrictions, import quotas
  - orderly market agreements using voluntary export restraints,
- local content requirements,
- dumping,
- anti-dumping regulations,
- subsidies, and
- government procurement policy.

Quantity restrictions may take the form of strict quotas where only a certain number the protected good can be imported; or quantity restrictions may appear as an Orderly Market Agreement (OMA) where imports are restricted to certain agreed upon market share. The instrument generally used in OMAs is the voluntary export restraint (VER) where the exporting country limits its exports, realizing that if it does not this it will most likely face even higher restrictions imposed by the importing country.

Local content requirements dictate that a minimum value added to a product be done within a certain boundary. For example, with automobiles NAFTA will require a 90% local content requirement if the car is to classified as North American. We find many local content regulations in the negotiations between developing countries and MNFs.

Dumping or selling at below costs may take different forms. Sporadic dumping is due to vagaries in the market. If there is a downturn in the market, a company may find itself with excessive inventories. It may sell off inventories at below cost in order to avoid high inventory costs.

Persistent dumping results from international price discrimination. A profit maximizing firm may charge different prices in different markets if the demand conditions in the two markets are different.
Predatory dumping is the most pernicious type. A company sells at below cost with the express purpose of driving competitors out of the market. Once this has occurred, the company will have a monopoly position. In order to achieve this, the company will suffer short-term losses, possibly funded by a segmented market. For example, Japanese companies usually charge higher prices in Japan because Japanese consumers have fewer choices in the goods available to them. Therefore, the high domestic profits have made it possible to incur losses in foreign markets with the goal of driving out competition. The television industry in the US suffered from this type of activity in the late 70's. By the time the US government imposed anti-dumping regulations, the domestic industry had already suffered from a drastic decline.

Giving subsidies is a government policy to underwrite domestic production putting competitors at a disadvantage. This may take the form of actual cash transfers, but it usually involves preferential tax treatment or access to below-market financing.

In most countries, government procurement policies restrict government purchases to domestic goods. When cheaper, higher quality foreign products are available, then this activity constitutes restrictions to trade. An example of this type of NTB involves Japan's telecommunications industry. The telephone system in Japan, as in many other countries, is owned by the government. The Japanese government bought only Japanese products despite having access to US products which were better and cheaper. An accord between Japan and the US signed in September, 1994, has led to Japanese purchases of some US goods.

The percentage of imports covered by NTBs increased from 15.1% in 1981 to 17.7% in 1986. While the increase in NTBs is disturbing, their distribution may be even more distressing. Developing country exports tend to be more affected by NTBs than industrial countries as shown in Table 2.

<table>
<thead>
<tr>
<th></th>
<th>EC</th>
<th>US</th>
<th>Japan</th>
<th>OECD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial</td>
<td>14</td>
<td>16</td>
<td>29</td>
<td>17</td>
</tr>
</tbody>
</table>
Welfare Analysis of Quantity Restrictions

In a static world, the welfare effects of a quantity restriction (QR) are similar to that of a tariff. Measures QR effectiveness are be measured in tariff equivalences. The main difference is the manner in which imports are restricted.

Recall that equilibrium in an open market is achieved when Qd (domestic) = Qs (domestic) + imports. With a tariff, the domestic price was set by the relationship between world price and the tariff. Imports were then allowed to adjust to achieve equilibrium.

With a QR, the level of imports is determined by policy. Imports are restricted and cannot adjust to equilibrate the market. At the world price, for an effective quota, there will be a shortage of the good. That is, at P*, quantity demanded will exceed domestic quantity supplied plus the quota. This shortage will cause domestic price to rise until an equilibrium is reestablished.

The change in the domestic price, in Figure 4, from P* to Pdom, leads to changes in consumer and producer surplus. The quota is the horizontal length of the arrow.

Consumers lose surplus equal to the amount of the sums of area B, C, D and E. Again similar to a tariff, area B represents a transfer to domestic producers and the sum of areas C and E are deadweight loss. The main difference is the interpretation of area D. Since there is no tax, the

government obtains no tax revenue. It represents windfall profits, called quota rents, to the groups given the right to import the good.

Since the quota results in forcing domestic price above the world price, it allows those individuals licensed to import the good to earn windfall profits. They are able to buy the good in international markets at $P^*$ and sell at $P_{dom}$. The price difference represents profit per unit imported. The question is who gets these quota rents. Quantity restrictions, in their variety of forms, are replacing tariffs as the preferred protectionist measure. Instead of earning tariff revenue, the importing country now gives the quota rents to the exporting trade partner. In the automotive industry case of the 1980s, VERs granted to Japanese car companies earned high profits on their US exports.

US limits on imports of textiles and apparel from mainly developing countries is accomplished by the Multifiber Agreement. The governments of textile exporting nations distribute export production to their textile firms. This has led to corruption in many nations as these firms have a strong incentive to obtain the right to export to the US.

Static welfare analysis shows that tariffs and QRs appear to be fairly similar in their effects. However, QRs can be more restrictive in restraining imports. Two examples are with increases in demand and non-competitive domestic markets.
An increase in domestic demand in the presence of a tariff, such as from D0 to D1 in Figure 5 causes an initial shortage at the original level of imports, \((q_{0dt} - q_{st})\). This shortage is eliminated by an increase in imports to \((q_{1dt} - q_{st})\). The outcome for a QR, with the same tariff equivalence, results in fewer imports and a higher domestic price.

![Figure 6](image)

**Figure 6**

In Figure 6 demand again increases from D0 to D1. Again a shortage results, but this time imports cannot increase to re-equilibrate the market since they are limited by the quota. This shortage is eliminated by a further increase in domestic price from P$_{dom0}$ to P$_{dom1}$. Note that the level of imports remains unchanged or the \(q_{d}(q)_{0} - q_{s}(q)_{0}\) is equal to \(q_{d}(q)_{1} - q_{s}(q)_{1}\).

**Monopoly**

A non-competitive market such as a monopoly leads to a situation where the firm contrives a scarcity, meaning that it provides less to the market than would be the case if the market was competitive. The firm maximizes its profits by setting output to where marginal revenue equals marginal cost. The marginal revenue curve in Figure 7, represents the additional revenue earned from the sales of one more unit of the good. Notice that in order to sell more, the firm must lower the price of the good; hence, the marginal revenue curve lies below the demand curve. This allows the firm to charge a higher price, P$_{m}$, than the competitive outcome at the intersection of the demand curve and marginal cost curve.

Should this market open up to free trade, then the domestic price would be the same as the world price P*$. Domestic production at P* is q$_{s}$ and the amount demanded q$_{d}$. This would result in a
level of imports of qd-qs. The monopolist loses all monopoly power. It now has an overwhelming competitor, the rest of the world.

A tariff causes the domestic price to increase above the world price by the amount of the tariff. This restricts trade and domestic production rises to qst and the quantity demanded falls to qdt, resulting in lowered imports of the amount of qdt-qst. But the monopolist still cannot create a contrived scarcity. Any reduction in output by the monopolist will result in an equal expansion of imports.

![Figure 7](image)

However with a quota, the non-competitive firm simply concedes the quota subtracting it from domestic demand. This would be a decrease in the firm's demand by the amount of the quota. The firm then treats the remainder of the market as a monopolist, setting output where the new MR equals MC and charging a higher monopolistic price. Restricting competition from abroad, the monopolist regains its monopoly power. The effects of the QR again prove to be more restrictive than a tariff.